NEW HAMPSHIRE
DEPARTMENT OF ENVIRONMENTAL SERVICES
SHELLFISH PROGRAM: 2005 ANNUAL REPORT

June 2006

New Hampshire Department of Environmental Services
Water Division
Watershed Management Bureau
www.des.nh.gov

R-WD-06-29

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Harry T. Stewart, P.E., Water Division Director

June 2006

Cover Photo: NHDES staff deploying caged blue mussel samples in Gosport Harbor. Transplanted mussels are tested for paralytic shellfish poisoning, or "red tide," weekly in spring, summer, and fall.

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Acknowledgements

The New Hampshire Department of Environmental Services (DES) Shellfish Program wishes to thank the following people for their assistance with various aspects of the program in 2005:

Natalie Landry, Phil Trowbridge, Carroll Brown, Sally Soule, Stephanie Larson, Mona Freese, Denise Ambelas, Rachel Rainey, Ellen D'Amico, and Graham Chantler of DES

Bruce Smith, Ralph Johnston, John Wimsatt, Jeff Marston, Tim McClare, and John Nelson of the New Hampshire Fish and Game Department

Jayne Finnigan, Pete Wikoff, Chris Stuart, Cheryl Myers, and Barbara Purington of the New Hampshire Department of Health and Human Services

Rich Langan, Ray Grizzle, Jennifer Greene, and Steve Jones of the University of New Hampshire

Tim Bridges, Tom Faber, and Marcel Belaval of the U.S. Environmental Protection Agency/Chelmsford Laboratory

Peter Koufopoulos, Peter Pirillo, and Virgil Carr of the US Food and Drug Administration

Ron Sher and Al Legendre of FPL/Seabrook Station

Paul Jennings and Joe Watts of the Star Island Corporation

Ann Reid, Candace Dolan, and the volunteers of the Great Bay Coast Watch

The work of the DES Shellfish Program was funded in part by grants from the New Hampshire Estuaries Project, the US Environmental Protection Agency, the NH Coastal Program, and the National Oceanic and Atmospheric Administration.

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INTRODUCTION AND PURPOSE OF REPORT

The New Hampshire Department of Environmental Services (DES), under the authority granted by RSA 143:21 and 143:21-a, is responsible for classifying shellfish growing waters in the State of New Hampshire. The purpose of conducting shellfish water classifications is to determine if growing waters meet standards for human consumption of molluscan shellfish. DES uses a set of guidelines and standards known as the National Shellfish Sanitation Program (NSSP) for classifying shellfish growing waters. These guidelines were collaboratively developed by state agencies, the commercial shellfish industry, and the federal government in order to provide uniform regulatory standards for the commercial shellfish industry. The NSSP is used by DES to classify all growing waters, whether used for commercial or recreational harvesting, because these standards provide a reliable methodology to protect public health. Furthermore, RSA 485-A:8 (V) states that "Those tidal waters used for growing or taking of shellfish for human consumption shall, in addition to the foregoing requirements, be in accordance with the criteria recommended under the National Shellfish Program Manual of Operation, United States Department of Food and Drug Administration."

This document represents the sixth Annual Report of the DES Shellfish Program. The preparation of an Annual Report serves two purposes. The first is to comply with the NSSP requirement for an annual review of growing area classifications. The second is to report to the citizens of the State of New Hampshire on the activities and accomplishments of the DES Shellfish Program, to describe water quality status and trends in shellfish growing areas, and to outline future activities to improve water quality and expand harvesting opportunities.

PROGRAM ACTIVITIES AND ACCOMPLISHMENTS

Monitoring Programs

Routine Monitoring

The DES maintains a routine shellfish water-monitoring program in all tidal waters in the State of New Hampshire. The focus of this program is to collect and test water samples for fecal coliform bacteria, which is used as an indicator of contamination from human or animal waste. Data generated by this program are used to annually review shellfish water classifications. Seventy-two stations in the Great Bay Estuary (including the Piscataqua River), Little Harbor/Back Channel, Rye Harbor, the Atlantic Coast, and the Hampton/Seabrook Estuary were sampled on a monthly basis for most of the year in 2005. Just over 600 samples (42 sampling runs) were collected in 2005, in accordance with the Systematic Random Sampling Strategy described in the NSSP. An additional 36 samples over five sampling runs were collected in selected Conditionally Approved areas to meet NSSP minimum requirements for open status sampling. Figures 1-6 depict growing areas and sampling stations. Appendix 1 lists current classification and acreages for all growing waters, while Appendix 2 presents the most recent 30 water samples collected as part of the Systematic Random Sampling program. Water quality in areas currently open to harvesting is generally good, although some sites show rainfall-related impacts that require management on a conditional basis. Results

from the routine monitoring program are reviewed in the "Update of Growing Area Classifications" section of this report.

The 2006 routine shellfish water-monitoring program will be conducted in a manner similar to the 2005 program, although the number and location of sampling stations will change. Four new sites will be needed per the results of a 2005 sanitary survey in Little Bay. To accommodate those new sites and other sampling needs, some existing sites will need to be eliminated from the program in 2006:

- Great Bay and Little Bay: the reclassification of Little Bay in July 2005 created the need for four new sites (GB25A and GB25B in Lower Little Bay, and GB6A and GB6B in Upper Little Bay. Each of these sites are located on new classification boundaries. The new sites make existing sites GB25, GB27, and GB28 expendable. Site GB82A in the Winnicut River will also be discontinued, as its data are similar to those from nearby GB82, and shallow water makes navigation to GB82A difficult/impossible unless the tide is high. Sampling may be discontinued at GB21 (mouth of Cocheco River) and GB22 (mouth of Salmon Falls River) if budget constraints dictate a smaller monitoring program, but for the time being it appears sampling will continue at these two sites in 2006.
- Hampton Harbor: Few changes are planned for 2006, but the completion of a sanitary survey for this growing area may lead to some changes in ambient monitoring site locations. A new site (HH38) will likely be created on the Taylor River, just west of the Hampton River Boat Club, on the boundary line between the Prohibited area associated with the marina, and the adjacent Conditionally Approved area. If budget constraints dictate a smaller monitoring program, sites HH5B and HH11 would be likely candidates for elimination.
- Little Harbor: No changes are planned for 2006.
- Rye Harbor: No changes are planned for 2006, although some/all of these sites may be eliminated if budget constraints dictate a smaller monitoring program.
- Atlantic Coast: No changes are planned for 2006.

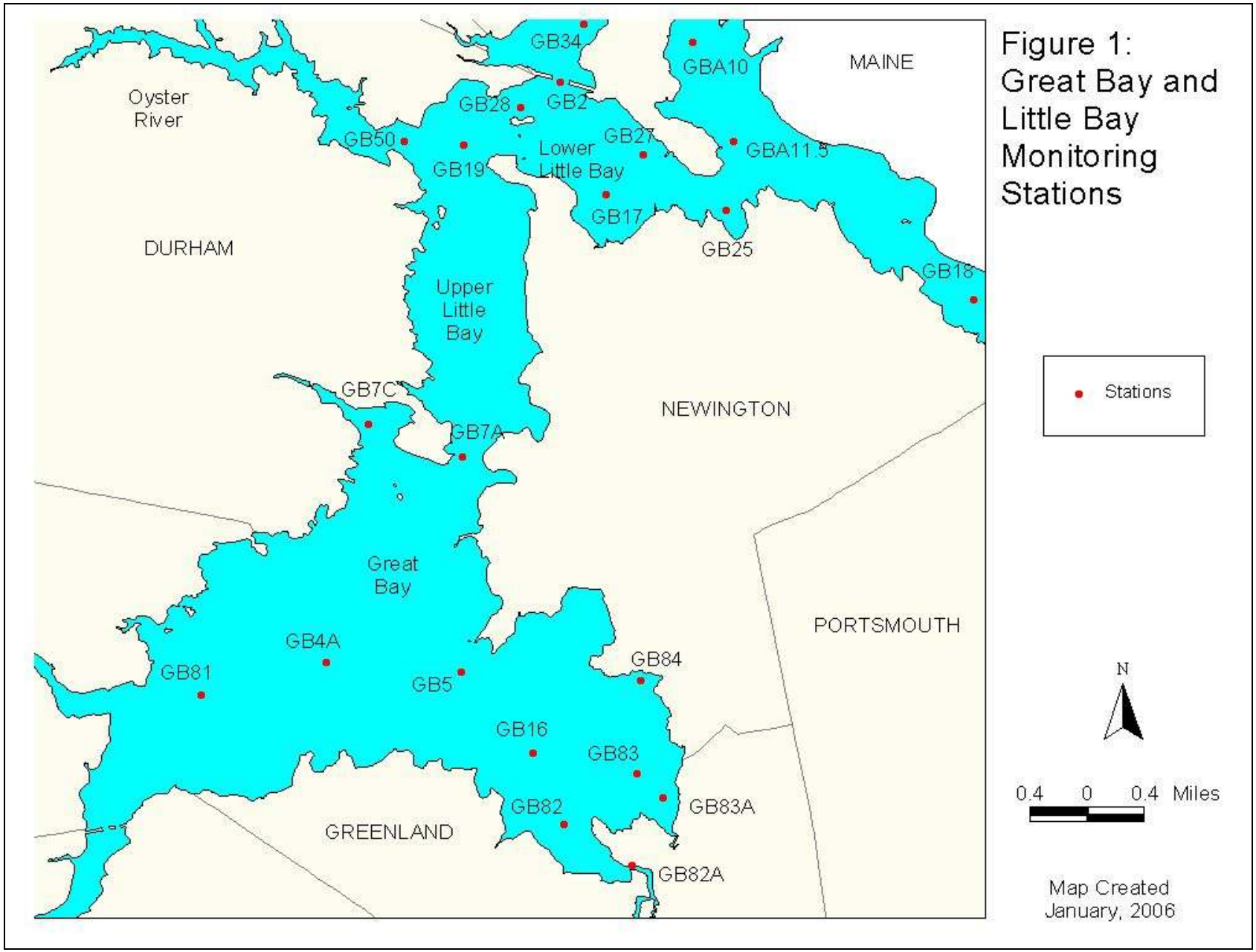
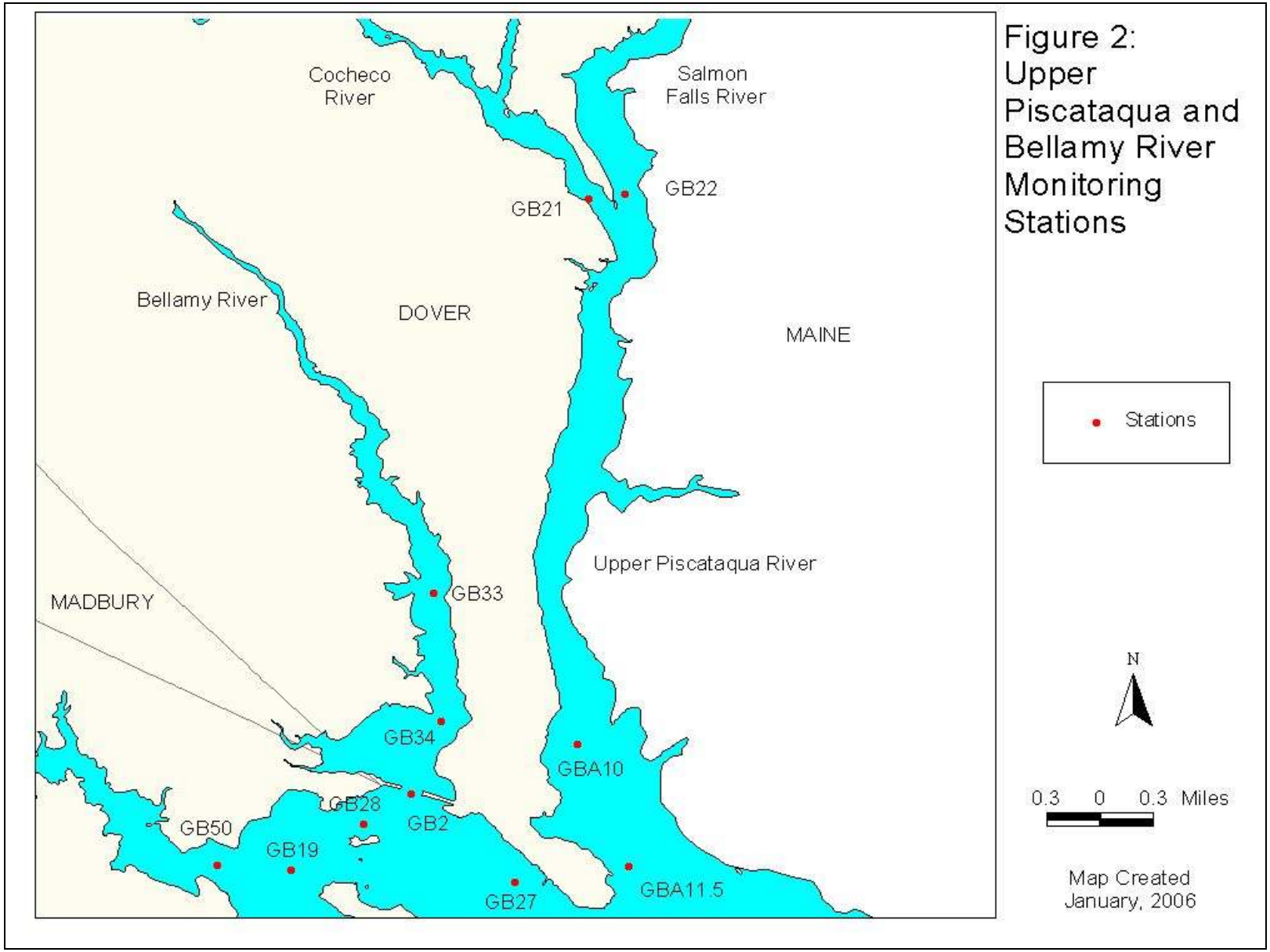
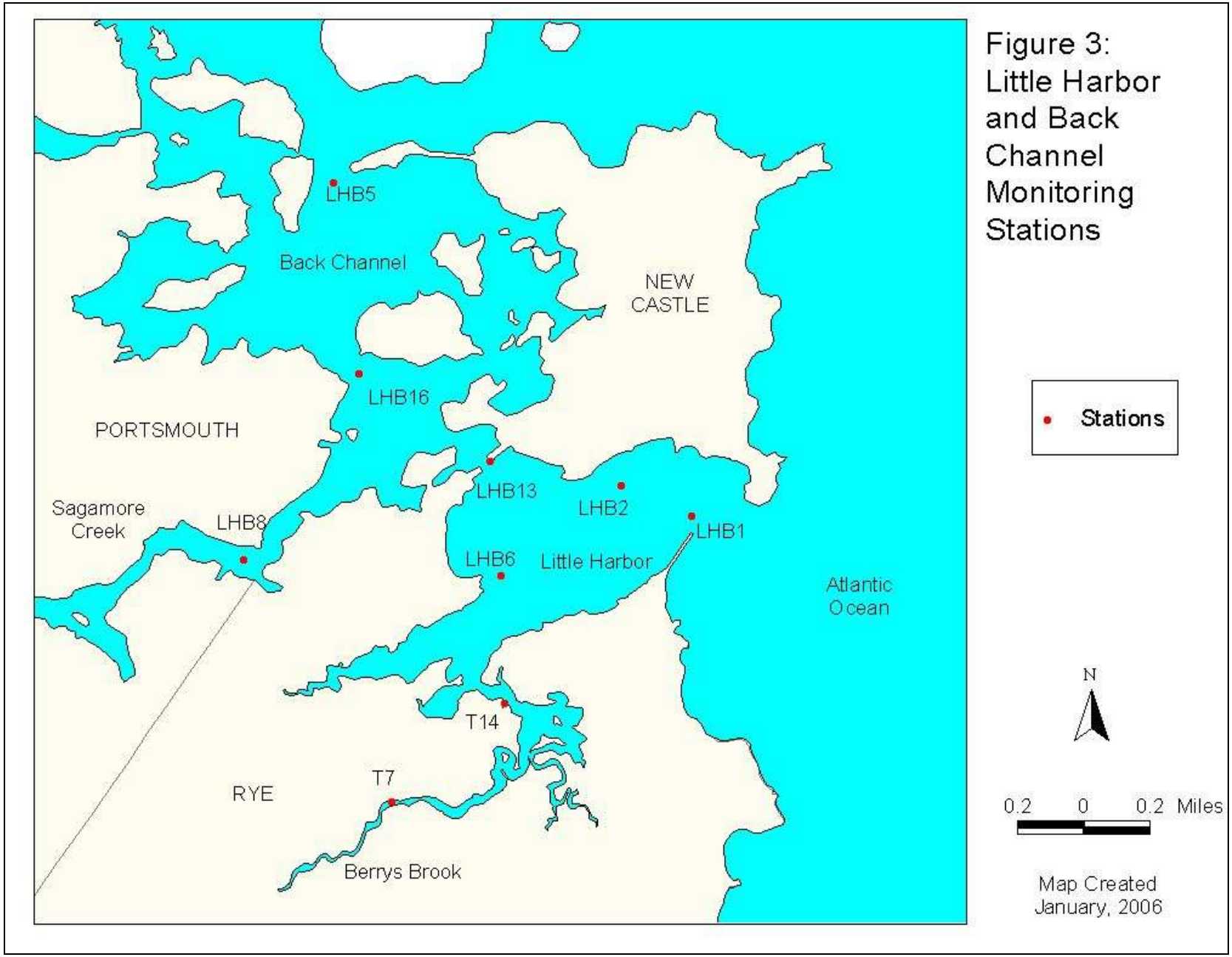
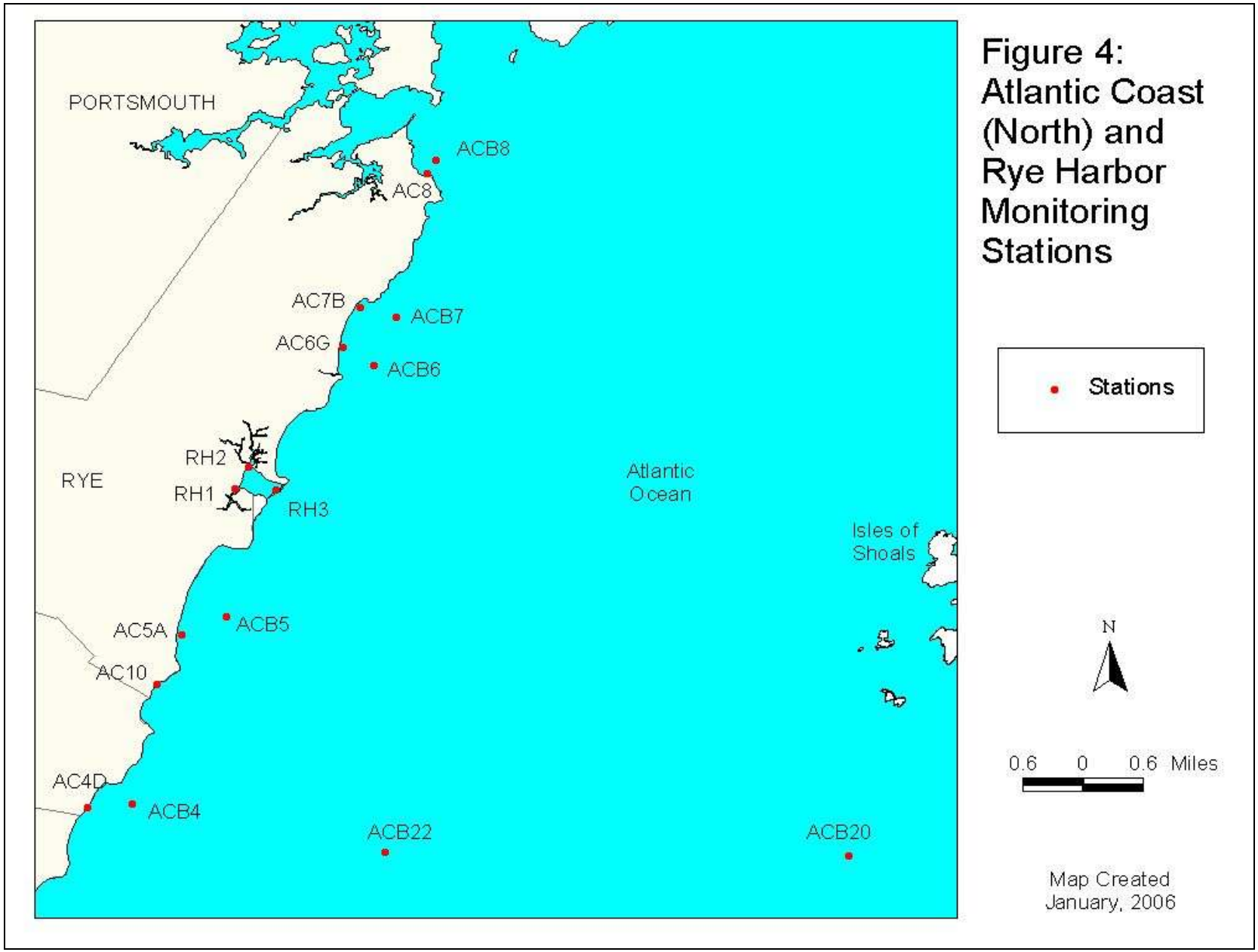
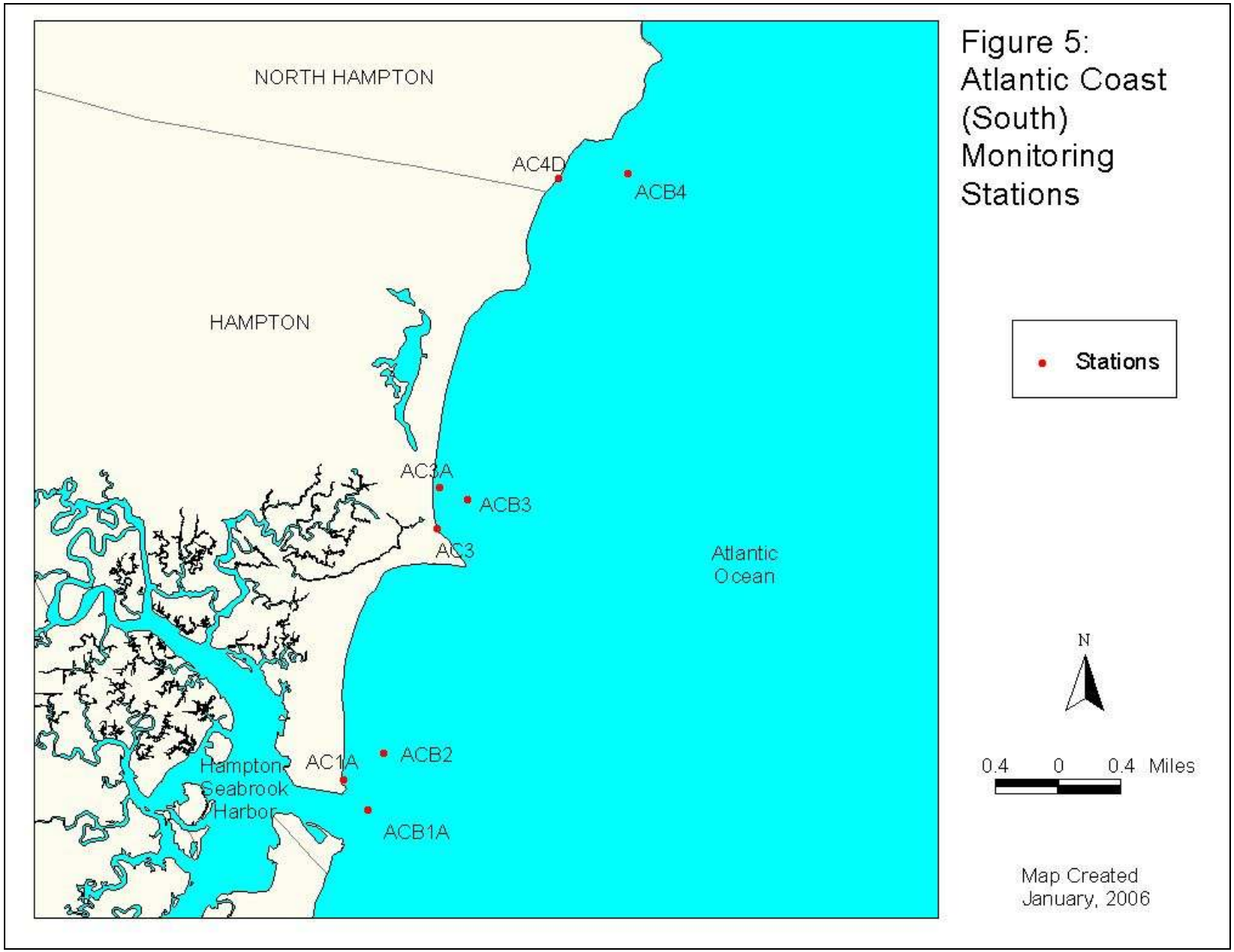


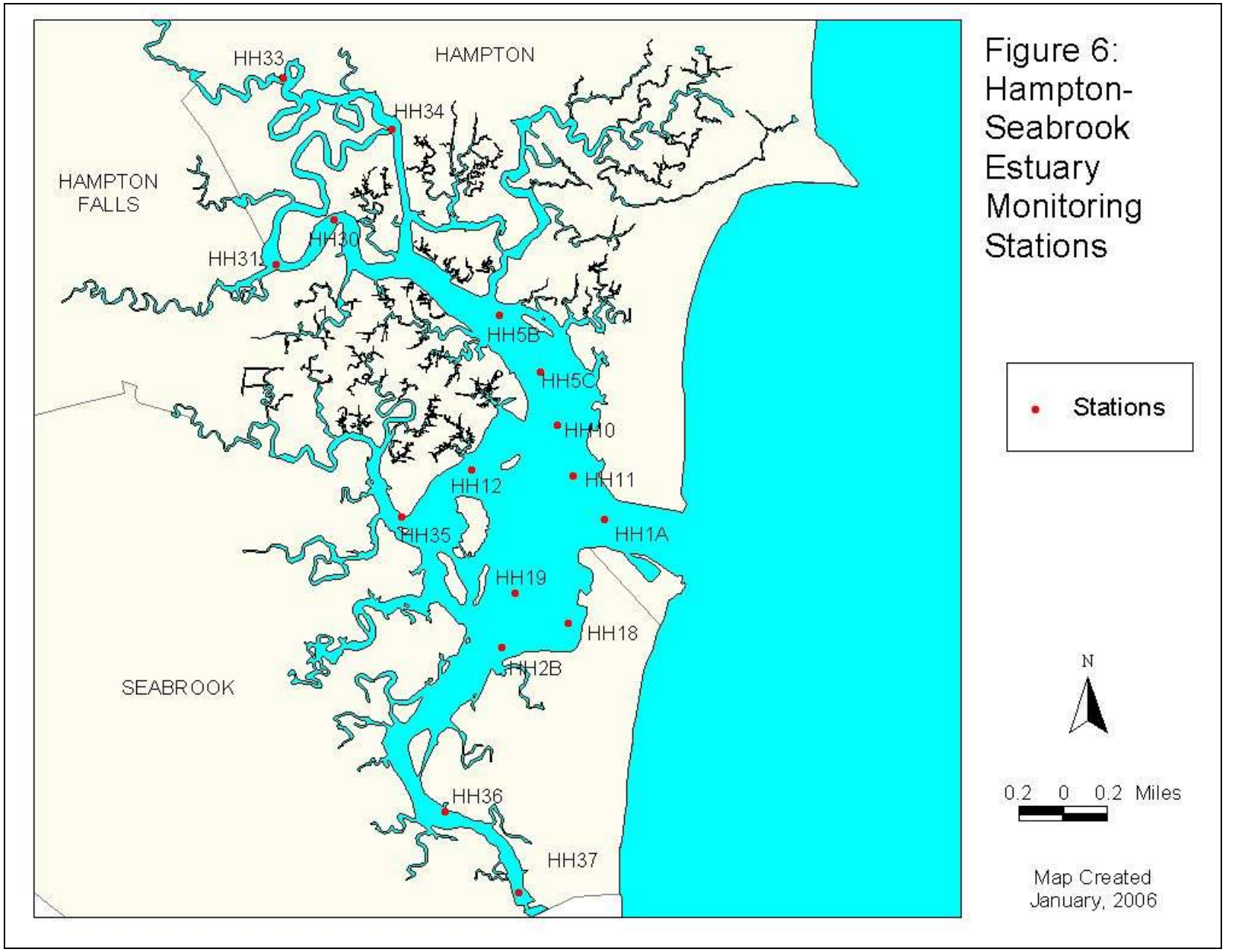
Figure 1:
Great Bay and
Little Bay
Monitoring
Stations
GB34
GBA10
MAINE
Oyster
River
GB28
GB2
GB50
GB27
Lower
Little Bay
GBA11.5
GB19
GB17
DURHAM
GB25
GB18
Upper
Little
Bay
GB7C
NEWINGTON
GB7A
Stations
Great
Bay
PORTSMOUTH
GB4A
GB84
GB81
GB5
GB16
GB83
GB82
GB83A
GREENLAND
GB82A
N
0.4 0 0.4 Miles
Map Created
January, 2006


Cocheco River
Salmon Falls River
GB22
GB21
Bellamy River
DOVER
MAINE
Upper Piscataqua River
MADBURY
GB33
GB34
GBA10
GB28
GB2
GB50
GB19
GB27
GBA11.5
Figure 2: Upper Piscataqua and Bellamy River Monitoring Stations
Stations
N
0.3 0 0.3 Miles
Map Created January, 2006


LHB5
Back Channel
NEW CASTLE
LHB16
PORTSMOUTH
LHB13
LHB2
Sagamore Creek
LHB8
LHB1
LHB6
Little Harbor
Atlantic Ocean
T14
T7
RYE
Berrys Brook
Figure 3: Little Harbor and Back Channel Monitoring Stations
Stations
N
0.2 0 0.2 Miles
Map Created January, 2006


PORTSMOUTH
ACB8
AC8
AC7B
ACB7
AC6G
ACB6
RH2
RYE
RH1
RH3
Atlantic
Ocean
Isles of
Shoals
AC5A
ACB5
AC10
AC4D
ACB4
ACB22
ACB20
Figure 4:
Atlantic Coast
(North) and
Rye Harbor
Monitoring
Stations
Stations
N
0.6 0 0.6 Miles
Map Created
January, 2006


NORTH HAMPTON
AC4D
ACB4
HAMPTON
AC3A
ACB3
AC3
Atlantic
Ocean
Hampton-
Seabrook
Harbor
AC1A
ACB2
ACB1A
Figure 5:
Atlantic Coast
(South)
Monitoring
Stations
Stations
N
0.4 0 0.4 Miles
Map Created
January, 2006


HH33
HAMPTON
HH34
HAMPTON FALLS
HH30
HH31
HH5B
HH5C
HH10
HH12
HH11
HH35
HH1A
HH19
HH18
HH2B
SEABROOK
HH36
HH37
Figure 6: Hampton-Seabrook Estuary Monitoring Stations
Stations
N
0.2 0 0.2 Miles
Map Created January, 2006

Post Rainfall Monitoring

All estuarine waters that are open for harvest in New Hampshire are subject to closures following rainfall events. The amount of rain that causes contamination and warrants temporary closures ranges from 0.25 inches in Hampton/Seabrook to 1.50 inches in Great Bay and Little Bay. When such storms occur, DES conducts sampling of water and shellfish tissue in the days following the event to determine when the temporary closure can be lifted. In 2005, 131 post-rainfall samples were collected over the course of 31 sampling runs. A description of all rainfall-related closures is presented in a subsequent section of this report.

Emergency Closure Monitoring

All estuarine waters that are open for harvest in New Hampshire are subject to temporary closures in the event of a discharge of raw or improperly treated sewage from area wastewater treatment facilities. Furthermore, all estuarine and coastal waters in New Hampshire are subject to area-wide closures for severe rainfall, defined as rainfall events of 2.50 inches or more. 2005 was characterized by numerous heavy rainfall and sewage discharge events, especially in the spring and fall. Emergency sampling activity was high, with 227 samples collected over the course of 42 sampling runs. The specific closures implemented in 2005 are discussed in a subsequent section of this report.

Paralytic Shellfish Poison Monitoring

The waters of the Gulf of Maine are prone to "blooms" of microscopic algae that can produce potent neurotoxins, and filter-feeding shellfish can accumulate concentrations of these toxins such that the shellfish themselves become a public health threat to consumers. For this reason, the DES maintains a biotoxin monitoring program, focused on Paralytic Shellfish Poisoning (PSP).

The 2005 PSP season was marked by one of the most severe algal blooms on record, with most of the Gulf of Maine affected by high toxin levels and widespread harvesting closures from Maine to Cape Cod, Massachusetts. The New Hampshire monitoring program began with weekly blue mussel sampling in Hampton/Seabrook Harbor in April. Sampling at Star Island, Isles of Shoals began in the first week of May, and the high toxin level from the first sample collected at this site illustrated that an intense offshore algae bloom was already underway. This prompted DES to implement an immediate harvesting closure for offshore waters. A strong coastal storm with sustained winds from the east affected the area on the weekend of May 7-8, moving the algae bloom closer to shore. Within one week Hampton/Seabrook mussels began to show low levels of toxin, and by May 18 toxin levels were rapidly rising. The nearshore waters of the Atlantic coast and Hampton/Seabrook were closed to harvesting on May 19, 2005. Offshore mussels at Star Island also showed a rapid increase in toxin levels through May, peaking at over 1200 micrograms toxin per 100 grams of tissue in mid-June. The severe algae bloom and high toxin levels prompted DES to expand sampling to other areas, particularly in the Great Bay Estuary where some areas were still open for harvest. Sampling of blue mussels at Dover Point showed toxin levels rising in late May and into June, but not to levels that would warrant closure (one sample showed levels just under the mandatory closure level of 80 micrograms per 100 grams, but by this time the area was under a seasonal closure for boat sewage risk, so no PSP closure was necessary. Oyster sampling at Adams

Point showed no toxin in early June, but low levels of toxin were detected in mid-June. Levels at this site did not approach the mandatory closure limit. Sampling in Little Harbor was limited because a seasonal closure for boat sewage risk was in place before the PSP bloom affected inshore areas, but sampling was conducted to track the bloom's effect on this area. Moderate toxin levels were detected in June but had dropped to background levels when the area was next checked in October (prior to the lifting of the seasonal boat sewage risk closure). The effects of the PSP event were long lasting in Atlantic surf clams, a species well-known for retaining toxin for months after a bloom event is over. Elevated toxin levels in surf clams were detected in late May, with high levels evident throughout the summer. Levels began slowly declining through the fall, but a permanent lifting of the closure affecting surf clams could not be lifted until December 2005.

The severe PSP season required the collection of 87 samples, as compared to a typical sampling year of approximately 60 samples. A summary of the PSP closures affecting New Hampshire waters in 2005 is as follows:

- Offshore Atlantic waters closed to all harvesting for the period of 5/5/05 to 7/26/05 (85 days). The harvesting activity in this area affected was the offshore mussel aquaculture operation located approximately one mile south of White Island.
- Nearshore Atlantic waters closed to all harvesting on 5/19/05. The closure affecting blue mussels was lifted on 7/21/05 (64 days), but the harvest ban on surf clams was initially lifted on 9/21/05 (126 days). Surf clam harvesting was suspended in early October due to heavy rainfall. By early November the high bacteria levels from the October rainfall events had subsided, but precautionary surf clam sampling for PSP began to show elevated residual toxin levels. Data from other monitoring in New Hampshire and from neighboring states indicated that these elevated levels were not the result of a new PSP bloom, but rather was likely the result of inherent variability in the PSP test itself, coupled with some low residual levels of toxin. As a precaution, the closure of surf clam areas initially implemented after the October rainfall events was continued through early December. The closure was lifted after low PSP toxin results were observed over several consecutive weeks.
- Hampton/Seabrook Harbor was closed for harvest on the last two Saturdays of May (5/21/05 and 5/28/05). The area was closed not only for high PSP levels but also because of rainfall events in excess of the 0.25-inch closure threshold. Although PSP levels began dropping in this area in mid June and had dropped to background levels by mid July, the areas was under its typical seasonal closure for the period of June through October.

Shellfish Tissue Testing

In 2005, sampling was conducted under baseline (dry weather) conditions, as well as after rainfall and releases of improperly treated sewage from wastewater treatment plants. The data (Appendix 3) were used to make open/closed decisions for a number of growing waters, and will be an invaluable dataset for future sanitary surveys. A total of 98 samples were collected in 2005.

Pollution Source Identification and Evaluation

In support of sanitary survey development, a wide range of activities to identify, document, sample, and evaluate pollution sources in and near shellfish growing waters were undertaken in 2005. Targeted inspections and sampling of previously-identified sources was emphasized to complete sanitary surveys for selected growing areas (Hampton/Seabrook Harbor and Little Bay) or to collect data needed for annual/triennial sanitary survey reviews (Atlantic Coast, Little Harbor/Back Channel, and Great Bay).

The Great Bay shoreline survey (December 2004) established three new areas closed for harvesting (Crommet Creek, Pickering Brook, and Fabyan Point). Monitoring at these areas was continued in 2005 in the hopes of compiling adequate data to justify the reclassification of these areas in the future. The Little Bay shoreline survey revealed several pollution sources with potentially significant bacterial loading to Upper Little Bay. Hence, a great deal of activity was focused on evaluating the degree to which these sources affect the water quality in Upper Little Bay. The results of these efforts were used to reclassify Little Bay, including the establishment of a new area closed for harvesting (Branson Creek). Sampling in Hampton/Seabrook Harbor was conducted to evaluate the degree to which sources might affect the water quality in the harbor in order to help delineate new open closed boundaries for the Hampton/Seabrook Harbor Sanitary (currently in draft). In all, the work conducted in 2005 involved 31 sampling runs and investigation of 126 sites.

Sanitary Surveys

DES had a goal of surveying most shellfish growing areas by the end of 2005. The following gives an overview of progress toward that goal, and the status of each project that is currently underway:

- Bellamy River: Sanitary survey published in October 2005. The southern portion of the river was reclassified from Prohibited/Unclassified to Conditionally Approved, with temporary closures to be implemented following 1) rainfall events of over one inch, 2) release of improperly treated sewage from the Durham or Dover wastewater treatment facilities, and 3) seasonal closure in the summer. The northern portion of the river to the head of tide dam was reclassified from Prohibited/Unclassified to Prohibited due to intermittently poor water quality from a number of pollution sources.
- Hampton/Seabrook: DES Shellfish Program plans to issue a new sanitary survey for the area in 2006. Work for this report has been ongoing since 2000. An updated shoreline survey for pollution sources was conducted in 2005. A final report is currently being drafted.
- Little Bay: A final sanitary survey was issued in July 2005. Harvesting conditions relating to rainfall (closure after events of more than 1.50 inches) and wastewater treatment plant performance at the Durham and Dover wastewater treatment facilities were continued from a previous survey. However, the methodology for addressing seasonal boat sewage contamination risk was changed. The presence of boats with the capability of discharging raw or treated sewage in Little Bay creates a public health risk that must be evaluated and managed. The previous classification of Little Bay included relatively small Prohibited areas

around Great Bay Marine and the Little Bay Boat Club. Waters adjacent to these Prohibited areas would be seasonally closed when the sewage contamination risk posed by the number of boats present exceeded the Prohibited areas' capacity to dilute the sewage risk to acceptable levels. Each year the date of closure would vary, depending on when boats were actually taken out of winter storage and put on the moorings or slips. Given the confusion that the seasonal closures were causing among harvesters, a decision to adopt one large Prohibited area, sized to accommodate boat sewage risk from the marinas/mooring fields at full occupancy, was made in consultation with NH Fish and Game law enforcement and marine fisheries staff. This large prohibited area eliminates the need for seasonal closures, so adjacent waters will only be subjected to the rainfall and WWTF conditions noted previously. Another Prohibited area was developed for the mooring field near Adams Point using the same full-occupancy assumption. The adoption of this strategy not only will reduce confusion and facilitate enforcement, but will also make for more harvesting opportunities (on an acre-day basis).

- Upper Piscataqua River: Sanitary survey was begun in 2002, and will be completed in 2006. The survey for this area will be merged with surveys for the Cocheco and Salmon Falls rivers. A key component of the survey was the completion of a dye/dispersion study of the Dover wastewater facility's effluent in the Piscataqua River. The completion of that study enabled a delineation of a Prohibited/Safety Zone area around the outfall, which will encompass much of the river. Classification of areas adjacent to the safety zone will be finalized when the sanitary survey is completed in 2006.

DES originally set a goal of classifying all waters by the end of 2005, but this was amended in 2004 in consultation with several project partners. DES and the NHEP agree that classification of the lower Piscataqua River and Portsmouth Harbor (approximately 14 percent of the total estuarine acreage) should be delayed until a new NPDES permit is issued for the Portsmouth wastewater treatment facility, as the new permit may include provision for a reconstructed outfall. The new outfall may include a multiport diffuser which could affect how the area is ultimately classified. Classification of Rye Harbor and other small areas around the coast will also be postponed indefinitely. Thus, DES has revised its goal of shellfish water classification, targeting a figure of approximately 85 percent of all estuarine waters.

Other Activities

Wastewater Treatment Facility Dye Studies

The NSSP calls for the establishment of permanently closed Prohibited areas, or "safety zones," around all wastewater treatment plant outfalls. These zones not only serve as buffers for relatively minor difficulties in wastewater treatment (e.g., occasionally elevated bacterial levels in plant effluent relative to discharge permit limitations) but also serve to protect harvesters from shellfish that may be contaminated by more serious plant failures (e.g., malfunction of disinfection systems). These safety zones are sized to cover the area that would be contaminated during the period of time required for plant operators to discover a problem and notify state authorities, and the time required for state authorities to institute an emergency closure of shellfish harvesting areas.

Factors such as plant discharge characteristics (e.g., volume and bacterial concentration), as well as current speeds and available dilution capacity of the surrounding waters, are important to properly sizing the Prohibited area. Dye/dilution studies are often utilized to gather accurate data on the dilution capacity and time of travel characteristics around a wastewater treatment plant outfall.

No new dye studies were conducted in 2005. Field work for a rather complex dye study on the Dover WWTF was completed in 2004, and the report was completed in December 2005. In consultation with US FDA's Center for Food Safety and Applied Nutrition in Maryland, this study developed a new methodology for adjusting dye study data to account for how future (higher) flows might affect dilution, and subsequent Prohibited area delineation around an outfall.

Annual Program Review by USFDA

In February 2002, the US Food and Drug Administration (FDA) recognized New Hampshire as a "shellfish-producing" state because its shellfish regulatory programs (growing water classification, commercial handling, and patrol) comply with the National Shellfish Sanitation Program. This recognition, which is maintained through a satisfactory annual program review by FDA, allows New Hampshire companies, including aquaculture operations, to engage in interstate commerce. For the most recent program review, staff met with FDA over the course of several days in 2005 to perform site visits, review files, and other activities to help FDA evaluate the program. FDA issued its report in October 2005, finding the DES Shellfish Program to be in compliance with the relevant aspects of the NSSP.

Outreach Initiatives

The DES Shellfish Program engages the public through a number of outreach initiatives. The most significant of these is the development and maintenance of the program website (http://www.des.state.nh.us/wmb/shellfish), which not only gives information relevant to recreational harvesting (fact sheets, maps, FAQs, tide charts, information on openings/closings), but also provides access to a number of shellfish-related reports, including the 2004 DES Shellfish Program Annual Report). Recent additions to the site include enhanced maps and explanations of reclassified areas such as Great Bay, Little Bay, and the Bellamy River, all designed to assist harvesters in identifying new open/closed boundaries. Harvesters were invited to a presentation summarizing the revised classification of Great Bay delivered at a Great Bay Coast Watch meeting in June.

As has been the case in previous years, the DES Shellfish Program continues to involve citizen volunteers from the Great Bay Coast Watch in several aspects of the program. These include collection and transportation of mussel samples for PSP testing at Star Island, sampling of pollution sources, assistance in conducting ambient monitoring, and other activities. DES intends to continue to offer opportunities for volunteer involvement in 2006.

Quality Assurance Programs

The DES Shellfish Program developed and implemented Quality Assurance Project Plans (QAPPs) for bacterial monitoring, paralytic shellfish poison monitoring, and sanitary surveys in 2002. Each of these plans describes data collection methods, monitoring objectives, training needs, data review, documentation, management, and reporting, and other issues relative to the collection of environmental data. Ultimately, each QAPP outlines data collection such that the quality of the data generated by the monitoring program is known, thus enabling potential data users to determine the degree to which the data suit their own needs. Implementation of these QAPPs in 2005 is described below.

The Water Quality Monitoring QAPP stipulates:

- Annual coordination meeting with key personnel: No meeting was held in 2005. Coordination was achieved via emails on an as-needed basis.
- Training in monitoring procedures: A review of monitoring procedures was done on an ongoing basis during individual sampling runs when volunteers assisted with collection.
- Maintenance of a list of trained personnel: list was maintained at the DES Pease field office.
- Sampling of all conditionally approved areas to occur at least six times per year: this was accomplished, as noted in Appendix 2.
- Calibration of equipment (thermometers): For 2005, calibration dates were April 1 and August 5, 2005. Spreadsheets containing the calibration date, calibrator(s), and appropriate correction value, if applicable, are maintained at the DES Pease field office.
- Preparation of quarterly reports: quarterly report was submitted to the NH Estuaries Project, per conditions of an interagency agreement, in October 2005. Final report submitted in January 2006. NH Coastal Program semiannual reports were submitted, per grant conditions, in June 2005 and December 2005.

The Paralytic Shellfish Poison Monitoring QAPP stipulates:

- Weekly emails to appropriate lab and field staff to ensure coordination: this was done for the period of April through October.
- Monitoring of laboratory precision and establishment of new "CF" values as needed: Jayne Finnigan of the DHHS Public Health Laboratory reported that the laboratory maintained acceptable precision throughout the sampling period, with no new CF values needed.
- Documentation of the number of samples collected: 36 Hampton Harbor samples, 20 Star Island samples, 10 Hampton Beach samples, eight Little Bay samples, six Little Harbor samples, three offshore Atlantic aquaculture site samples, three Great Bay samples, and one Rye Harbor sample. Reporting of all PSP Closures: Off shore Atlantic closure memo issued May 5, 2005. Near shore Atlantic and Hampton closure memo issued May 19, 2005. Near shore Atlantic (excluding surf clams) and Hampton reopening memo issued July 21, 2005. Offshore Atlantic reopening memo issued July 26, 2005. Near Shore Atlantic (surf clams) reopening memo issued September 22, 2005.

The Sanitary Survey QAPP stipulates:

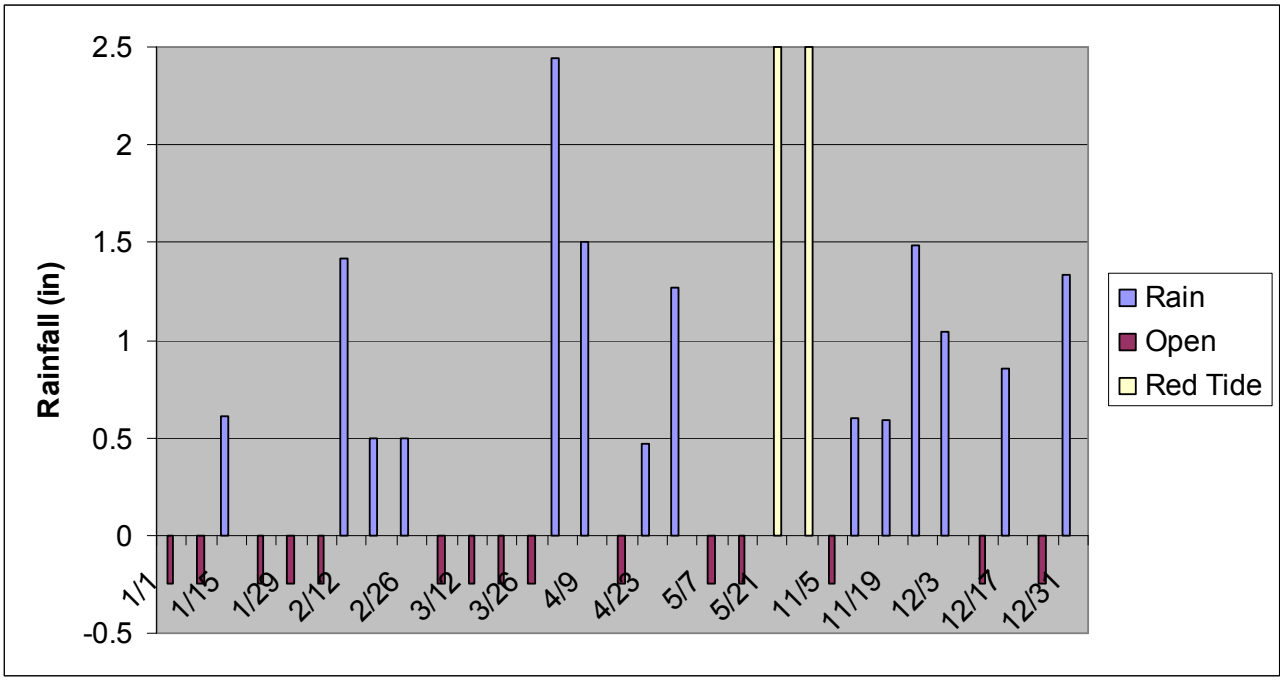
- Annual coordination meeting with key personnel: No meeting was held in 2005. Coordination was achieved via emails on an as-needed basis.
- Training in monitoring procedures, to be held at annual meeting of key personnel: A review of monitoring procedures was done on an ongoing basis during individual sampling runs when volunteers assisted with collection.
- Document growing areas for which sanitary surveys are under development: Little Bay and the Bellamy River were completed in July and October 2005 (respectively). Three separate surveys for the Upper Piscataqua River, Cocheco River, and Salmon Falls River were merged into one growing area, termed the Piscataqua River North shellfish management area. The sanitary surveys for this area and for Hampton/Seabrook Harbor are still underway.
- Calibration of equipment (thermometers): For 2005, calibration dates were April 1 and August 5, 2005. Spreadsheets containing the calibration date, calibrator(s), and appropriate correction value, if applicable, are maintained at the DES Pease field office.
- Verify that tidal and stratification data are of acceptable quality: No tidal studies or dye/dispersion studies were conducted in 2005.

CLOSURES

Rainfall/Conditional Closures

In 2005, areas classified as "Conditionally Approved" for rainfall and/or WWTF performance were some sections of Hampton/Seabrook Harbor (rainfall closure threshold of 0.25 inches), portions of Little Harbor (rainfall closure threshold of 0.50 inches), and portions of Great Bay and Little Bay (rainfall closure of 1.50 inches). Portions of the Bellamy River were reclassified as Conditionally Approved in late 2005, but a series of rainfall events in excess of the one-inch closure criterion kept the area closed for the balance of the calendar year. Figures 7 and 8 depict the pattern of open/closed weekends for calendar year 2005 in Hampton/Seabrook and Little Harbor, respectively. Blue bars represent weekends when the area was closed to harvesting due to rainfall, with the size of the bar indicating the amount of rain that caused the closure. Red bars depict weekends that were open for harvesting.

Figure 7: Hampton/Seabrook Rainfall Closures for 2005 Weekends

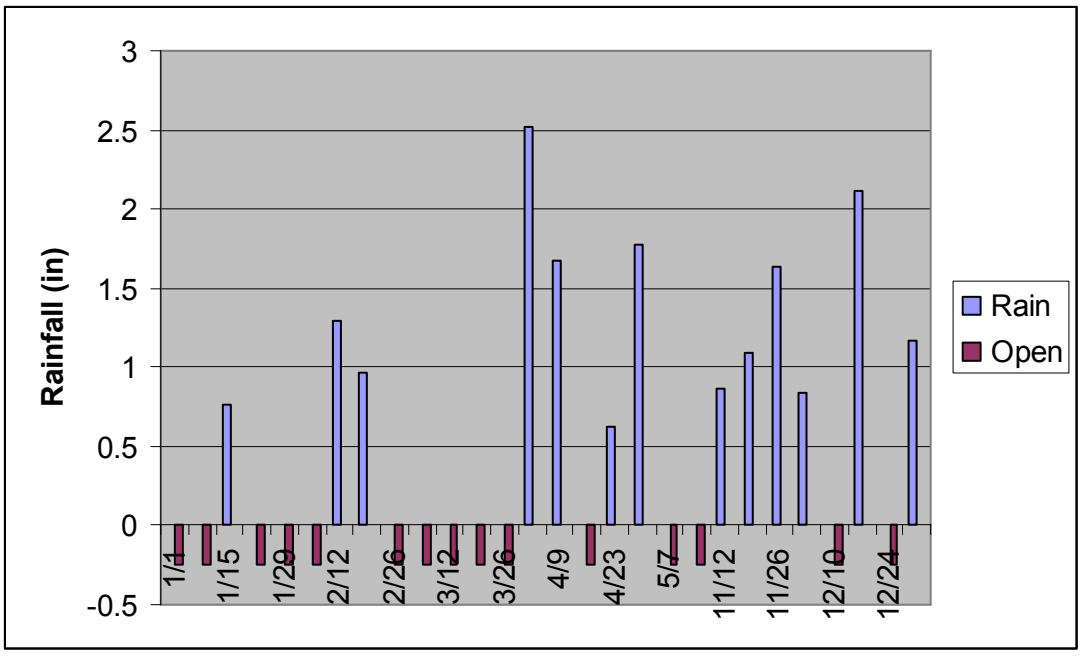


Note: the 5/28/05 closure was due not only to red tide, but also because of over five inches of rain from 5/21/05 to 5/27/05.

Weather conditions in early 2005 were relatively favorable for harvesting opportunities, but less favorable later in the year, especially in late spring and mid/late fall. Of the 31 days during the January-May and November-December open season in Hampton/Seabrook, 15 days (48 percent) were open for harvesting (53, 45, and 48 percent in 2004, 2003, and 2002, respectively). All but one of the rainstorms that caused a closure were over 0.50" of rainfall. One of the worst outbreaks of red tide, or Paralytic Shellfish Poisoning in the Gulf of Maine affected Hampton Seabrook in the last two weeks of May. A total of 15 sampling runs were conducted after the rainfall events that caused a closure. Ten of these runs produced data that supported opening the flats before the typical 14-day closure period had elapsed.

In Little Harbor, there were 28 weekends during which harvesting could have occurred (January to mid-May, November-December). A total of 15 days, or 54 percent, were open for harvesting (59 percent in 2004, and 38 percent in 2003). Eight of the 12 rainfall closures were triggered by storms of over one inch of rainfall. A total of seven sampling runs were conducted after the rainfall events that caused closures. Four of these runs produced data that supported opening the flats before the typical 14-day closure period had elapsed.

Figure 8: Little Harbor Rainfall Closures for 2005 Weekends



Rainfall closures also affected Great Bay and Little Bay, although these are less frequent because of a relatively high rainfall closure threshold of 1.50 inches. These areas were placed in the closed status for rainfall three times:

- Over 1.5 inches of rain on April 28, 2005 put the area in a rainfall closure for the period of April 28 to May 5.
- Over four inches of rain on October 8, 2005 put the area in a rainfall closure for that day. The following day a sewage overflow closure took effect, after the rainfall triggered a CSO event in Exeter.
- Over 1.5 inches of rain on November 22, 2005 put the area in a rainfall closure. The area stayed in the closed status for the next several weeks because of a series of rainfall events. On December 16, 2005, a sewage overflow closure took effect, after heavy rainfall triggered a CSO event in Exeter.

Emergency Closures

There was an unusually large number of heavy rainfall events in both spring and fall in 2005, some of which caused sewage overflows from municipal wastewater treatment facilities and/or sewage collection infrastructure. Closed status sampling (water and shellfish tissue) is initiated after such closures to determine when a reopening of the growing area is appropriate. Closures attributable to rainfall (no associated sewer discharges) were described in the previous section. Sewage discharge events that triggered an emergency closure are summarized in Table 1.

Table 1 lists the emergency closures related to sewage overflows from wastewater treatment facilities or sewage collection infrastructure implemented in 2005. Note that harvesting in Hampton Harbor and Little Harbor is limited to Saturdays only during the open season.

Table 1: WWTF-Related Emergency Closures Implemented in 2005

Area	Rainfall or Sewage Discharge Event	Dates Closed to Harvesting
Great Bay, Little Bay Atlantic Coast, Hampton, Little Harbors	3/29/05: 523,000 gallon combined sewer overflow from Exeter following heavy rain. Additional 129,000 gallon CSO following rainfall on 4/3/05 3/29/05: all other areas closed for harvest due to rainfall in excess of 2.50 inches)	3/29/05-4/13/04 for Great Bay, Little Bay; 3/29/05 – 4/7/05 for Atlantic Coast 4/2/05, 4/9/05 for Hampton 4/2/05, 4/9/05 for Little Harbor
Great Bay, Little Bay	5/24/05: 875,000 gallon combined sewer overflow from Exeter following heavy rain. Note: Over 5 inches of rain fell in the last week of May, but emergency closures were not in effect for several areas: Little Harbor was already under seasonal closure for boat sewage risk. Hampton Harbor and the Atlantic Coast were already under a PSP/Red Tide closure.	5/24/05-6/10/05
Great Bay, Little Bay	8/28/05: 1,000,000 gallon combined sewer overflow from Exeter following a pump station failure	8/29/05-9/2/05
Great Bay, Little Bay Atlantic Coast	10/9/05: 19,000 gallon combined sewer overflow from Exeter following heavy rain on 10/8/05 10/15/05: 383,600 gallon combined sewer overflow from Exeter following heavy rain 10/25/05: 412,000 gallons combined sewer overflow from Exeter following heavy rain Closed for harvest due to rainfall in excess of 2.50 inches 10/8 rainfall of ~4 inches, and 10/25 rainfall	10/8/05 – 11/11/05 10/8/05 – 11/4/05

Area	Rainfall or Sewage Discharge Event	Dates Closed to Harvesting
	of ~4 inches) Note: October rains did not warrant emergency closure of Hampton Harbor or Little Harbor, as both areas were still under seasonal closure for boat sewage risk.	
Great Bay, Little Bay	12/16/05: 186,600 gallon combined sewer overflow from Exeter following heavy rain	12/16/05 – 12/23/05

Paralytic Shellfish Poisoning Closures

As previously noted, the 2005 PSP season was one of the most severe on record, with record levels of toxicity in New Hampshire shellfish. The size of the areas affected, and the length of time that affected areas had to be kept closed to harvesting, was unprecedented (the reader should note that data from neighboring states indicates a PSP event in the early 1970s was just as severe, if not more so, than the 2005 event; however, no data on shellfish toxicity or closures in New Hampshire are available for that event). A total of 87 samples were collected in 2005, as compared to a typical sampling year of approximately 60 samples. A summary of the PSP closures affecting New Hampshire waters in 2005 is as follows:

- Offshore Atlantic waters closed to all harvesting for the period of 5/5/05 to 7/26/05 (85 days). The harvesting activity in this area affected was the offshore mussel aquaculture operation located approximately one mile south of White Island.
- Nearshore Atlantic waters closed to all harvesting on 5/19/05. The closure affecting blue mussels was lifted on 7/21/05 (64 days), but the harvest ban on surf clams was initially lifted on 9/21/05 (126 days). Surf clam harvesting was suspended in early October due to heavy rainfall. By early November the high bacteria levels from the October rainfall events had subsided, but precautionary surf clam sampling for PSP began to show elevated residual toxin levels. Data from other monitoring in New Hampshire and from neighboring states indicated that these elevated levels were not the result of a new PSP bloom, but rather was likely the result of inherent variability in the PSP test itself, coupled with some residual levels of toxin. As a precaution, the closure of surf clam areas initially implemented after the October rainfall events was continued through early December. The closure was lifted after low PSP toxin results were observed over several consecutive weeks.
- Hampton/Seabrook Harbor was closed for harvest on the last two Saturdays of May (5/21/05 and 5/28/05). The area was closed not only for high PSP levels, but also because of rainfall events in excess of the 0.25-inch closure threshold. Although PSP levels began dropping in this area in mid June and had dropped to background levels by mid July, the area was under its typical seasonal closure for the period of June through October.

Seasonal/Marina Closures

Areas with large concentrations of boats (marinas and mooring fields) pose a seasonal risk of sewage contamination. Some of these marinas/mooring fields are adjacent to shellfishing areas that are available for harvest on a conditional basis. Weekly surveys of the number of boats present (especially those likely to have sanitary waste disposal equipment) determine when these areas are seasonally opened and closed. Table 2 summarizes the dates when conditionally approved areas were closed and reopened as a result of these surveys.

Table 2: Seasonal Closures and Reopenings Adjacent to Marinas and Mooring Fields

Area	Date Closed	Date Reopened	Comments
Hampton/Seabrook	6/1/05	10/31/05	Boat survey on 5/16/05 indicated seasonal closure not yet needed. Area closed for rainfall and red tide the following two weekends, after which clamming season ended. Boat survey on 6/1/05 showed number of boats almost at level requiring seasonal closure. Area remained closed until fall. Boat survey on 10/31/05 indicated that a sufficient number of boats had been hauled out; area opened on 11/5/05.
Little Harbor	5/14/05	10/31/05	Boat survey on 5/9/05 indicated fresh water to all slips at Wentworth Marina was turned on; seasonal closure implemented for the following weekend on 5/14/05. Water turned off at all slips for the season on 10/31/05. That, plus the number of vessels being secured/shrinkwrapped, indicated the risk for boat sewage contamination was minimized.
Lower Little Bay	6/11/05	7/28/05	On 7/29/05, a new classification was adopted to include a new Prohibited area sized to accommodate potential boat sewage risk at full occupancy for significant boating areas in Lower Little Bay. This Prohibited area eliminates the need for seasonal closures.
Upper Little Bay	-----	-----	None needed. Spring/summer boat surveys showed less than 10 boats with heads through 7/26/05. On 7/29/05, a new classification was adopted to include a new Prohibited area sized to accommodate potential boat sewage risk at full occupancy for significant boating areas in Upper Little Bay. This Prohibited area eliminates the need for seasonal closures.

UPDATE OF GROWING AREA CLASSIFICATIONS

The official list of all New Hampshire shellfish growing areas is presented in Appendix 1. Fecal coliform data used to calculate the NSSP statistics presented below are in Appendix 2. The reader should note that for most sites, only the most recent 30 samples in Appendix 2 were used for calculation of statistics. Furthermore, Appendix 2 also summarizes the rainfall and seasonal criteria applied to the data, which vary for different growing areas, for statistical calculations.

Great Bay

At the start of 2005, the Great Bay growing area included 2,850 acres of Conditionally Approved waters, 182 acres of Restricted waters, and 1,184 acres of Prohibited/Safety Zone waters (Figure 9). The waters of the Squamscott and Lamprey rivers are included in the safety zone

NSSP statistics for Great Bay sites are presented in Table 3. Water quality data for sites in the Conditionally Approved area generally show low fecal coliform levels and indicate water quality that is consistent with the Conditionally Approved classification, including a rainfall closure condition of 1.50 inches. A new sanitary survey was completed for the growing area in December 2004, and called for the creation of several new sites. Restricted waters near the Winnicut River, Pickering Brook, Fabyan Point, and Crommett Creek led to the establishment of sites GB82/GB82A, GB83/GB83A, GB84, and GB7C, respectively. Site GB81 was created in 2004 following the completion of dye/dilution studies for the WWTFs in Exeter, Newfields, and Newmarket. These studies suggested that the Prohibited/Safety Zone currently located at GB4A could be moved westward. Data from Site GB81 will be used to determine if existing water quality conditions justify such an adjustment. No adjustment will be made until a total of 30 samples have been collected in accordance with the systematic random sampling strategy.

Table 3: NSSP Statistics for Stations in Great Bay
(Refer to Figure 1 for sampling site locations)

	GB81	GB4A	GB5	GB16	GB82	GB82A	GB83	GB83A	GB84	GB7C
Count	12	30	30	30	6	6	6	6	6	6
Geomean	9.3	7.8	4.7	4.9	4.9	6.3	4.6	3.6	3.1	4.4
Est. 90th	60.4	41.6	17.2	20.9	13.3	27.2	19.2	23.2	13.7	21.4
Class.	N	CA	CA	CA	N	N	N	N	N	N

N = New, CA = Conditionally Approved

As noted earlier in this report, sampling at GB82A will be discontinued in 2006 because water depths are frequently too shallow for boat access.

Little Bay

The Little Bay growing area (Figure 10) was revised in July 2005. The reclassification involved the creation of a restricted area at Branson Creek near the Adams Point boat launch, and the

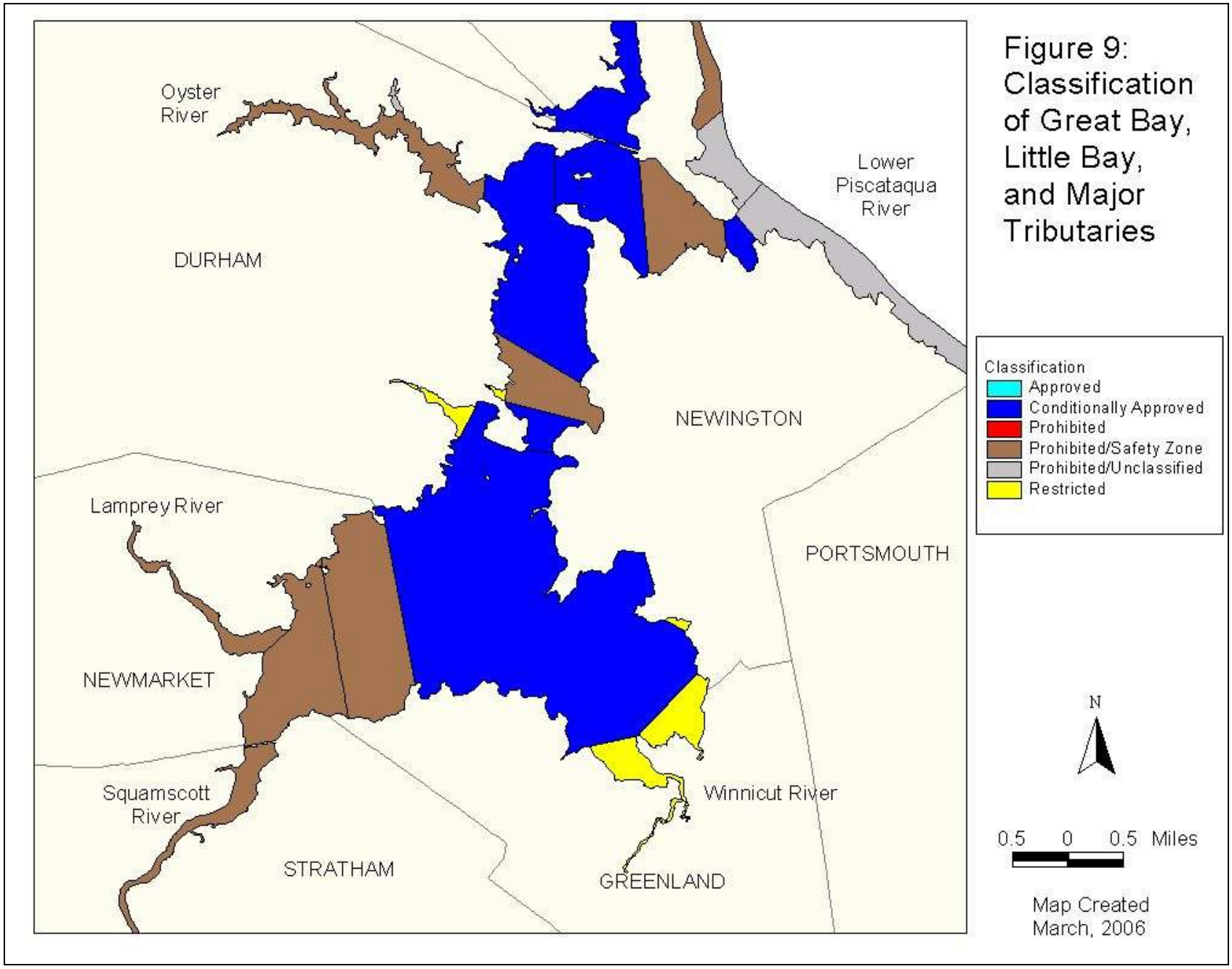


Figure 9: Classification of Great Bay, Little Bay, and Major Tributaries
Oyster River
Lower Piscataqua River
DURHAM
NEWINGTON
Lamprey River
PORTSMOUTH
NEWMARKET
Squamscott River
Winnicut River
STRATHAM
GREENLAND
Classification
Approved
Conditionally Approved
Prohibited
Prohibited/Safety Zone
Prohibited/Unclassified
Restricted
N
0.5 0 0.5 Miles
Map Created March, 2006

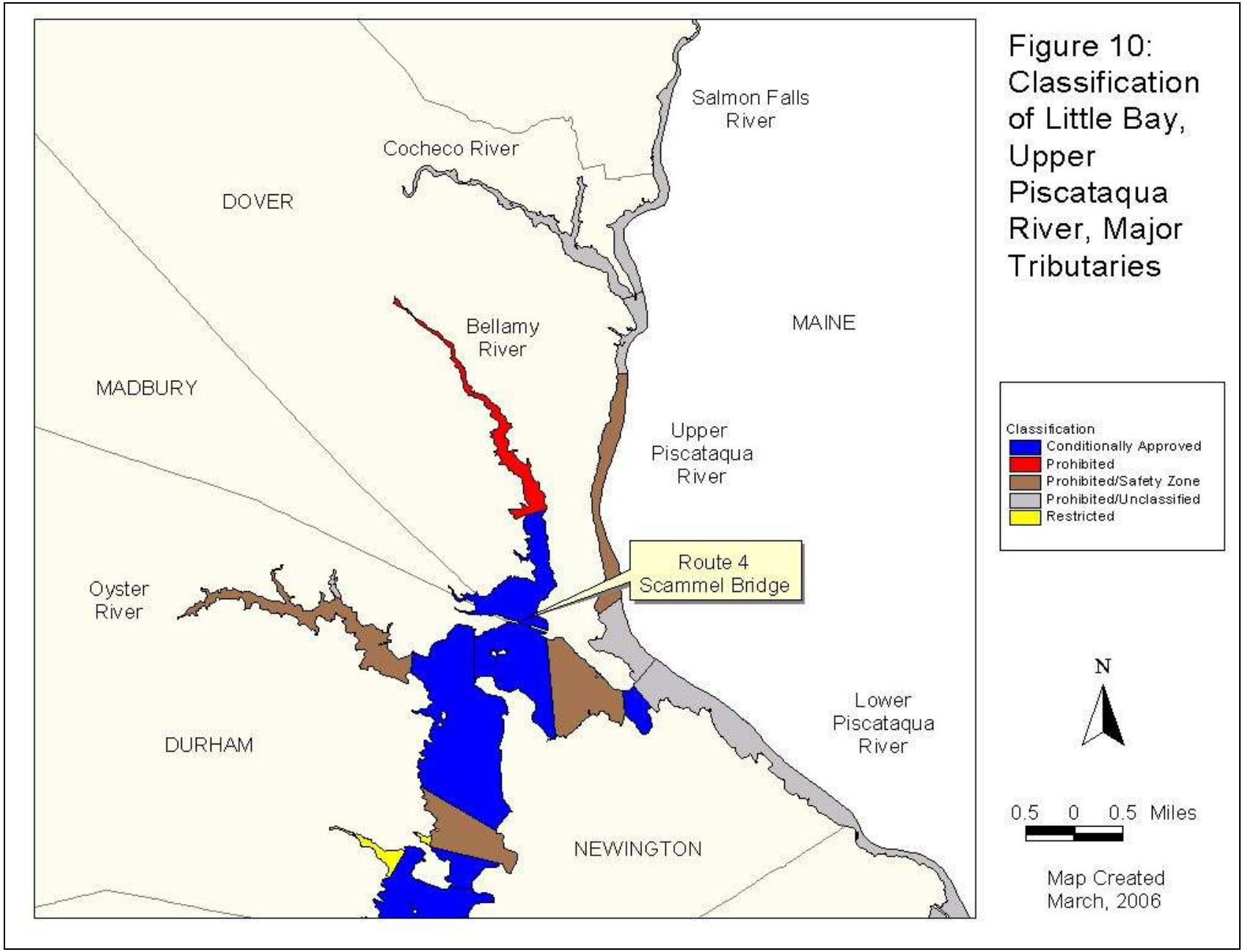


Figure 10: Classification of Little Bay, Upper Piscataqua River, Major Tributaries

creation of two Prohibited/Safety Zones around significant boating areas, sized for potential sewage contamination when the areas were at full occupancy. The adjacent growing waters had previously been open/closed on a seasonal basis, but this approach led to confusion among harvesters because the actual dates of the seasonal closures and reopenings would vary each year, depending on when boats were put in and hauled out for the season. The new approach closes a larger area on a permanent basis, but is a preferred approach because it affects an area with low shellfish abundance and actually results in more harvesting opportunities on an acre-day basis. The revised classification includes 1,333 acres of Conditionally Approved waters, six acres of Restricted waters, and 521 acres of Prohibited/Safety Zone.

NSSP statistics for Little Bay sites are presented in Table 4. Water quality data for sites in the Conditionally Approved area generally show low fecal coliform levels and indicate water quality that is consistent with the Conditionally Approved classification, including a rainfall closure condition of 1.50 inches. Sampling at GB6 was discontinued in 2005, so that site no longer appears in the table. A new sanitary survey was completed for the growing area in July 2005, and called for adjustment of sampling sites. New sites are needed on the boundaries of the Prohibited/Safety Zone areas: GB25A and GB25B in Lower Little Bay, and GB6A and GB6B in Upper Little Bay. Given the relocation of classification boundaries and new sites, historical sites GB25, GB27, and GB28 are no longer needed and will be discontinued in 2006.

Table 4: NSSP Statistics for Stations in Little Bay
(Refer to Figure 1 for sampling site locations)

	GB17	GB19	GB25	GB27	GB28	GB50	GB7A
Count	30	30	30	30	30	30	30
Geomean	5.5	5.9	7.5	6.8	4.6	5.7	4.4
Est. 90th	22.6	26.7	31.8	37.5	15.4	22.2	21.4
Class.	A	A	A	A	A	A	A

A = Approved

Piscataqua River

The Upper Piscataqua River growing area stretches from the mouths of the Cocheco and Salmon Falls rivers to Dover Point. Dye studies for the Dover wastewater treatment facility were completed in 2004. The December 2005 report describing these studies recommends boundaries for a Prohibited/Safety Zone area around the outfall (208 acres, Figure 10). Adjacent areas include 214 acres of waters that will be classified via a 2006 sanitary survey report. The lower Piscataqua River and Portsmouth Harbor (1,174 acres; Figure 11) remain unclassified, a situation that will continue until a decision on possible changes to the Portsmouth WWTF outfall is finalized as part of the NPDES permit renewal process.

NSSP statistics for Piscataqua River sites are presented in Table 5. Water quality data generally show high fecal coliform levels in the upper reaches of the river, with decreasing geometric means and measures of variability in the downstream direction. In 2004, Site GB24 was deemed to be of marginal value to the program. The delineation of the Dover WWTF Prohibited

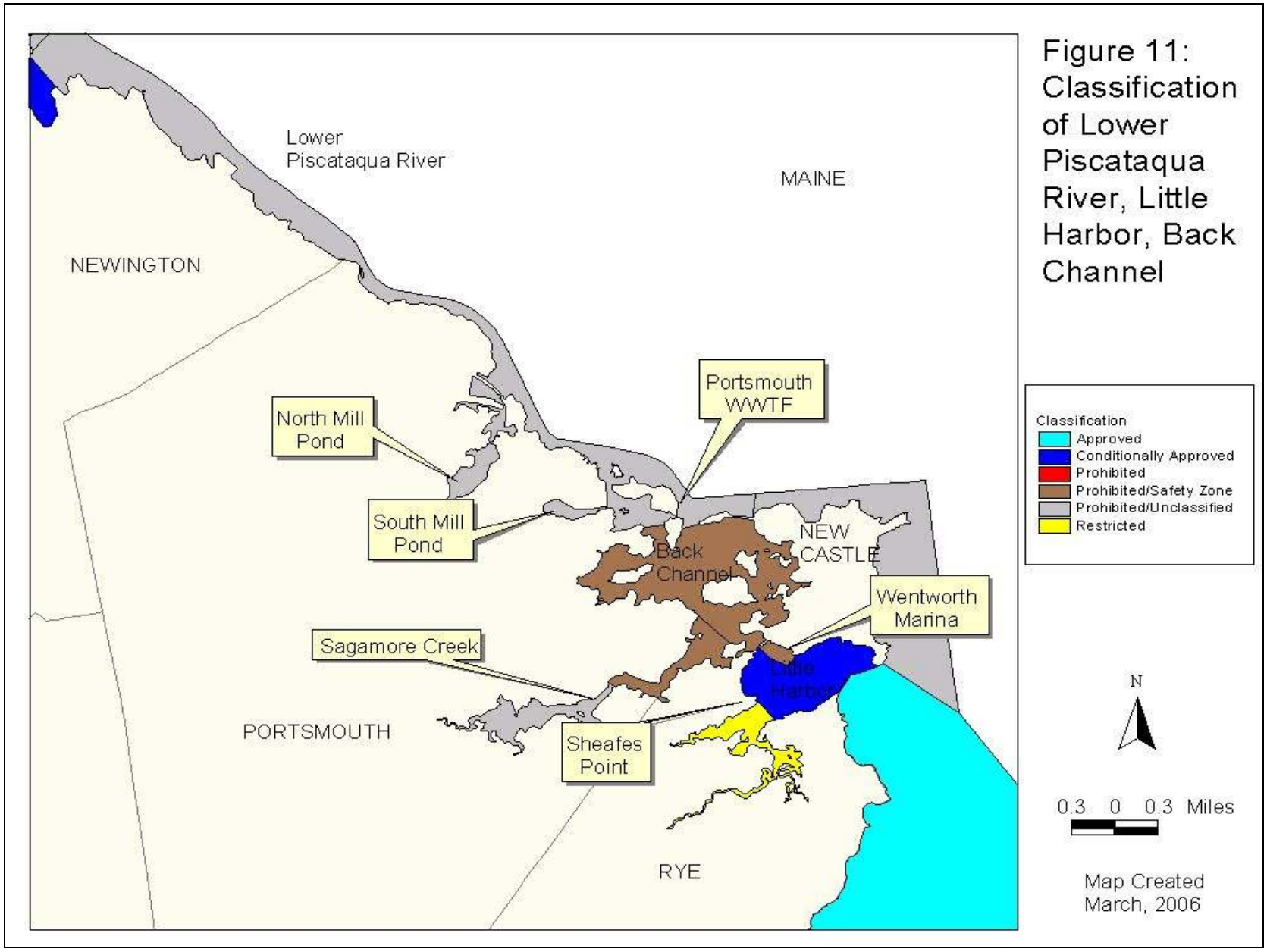


Figure 11: Classification of Lower Piscataqua River, Little Harbor, Back Channel

Zone also meant that sites GBA7 and GB20 were of limited value. As a cost-saving measure, these three sites were discontinued in 2005.

Table 5: NSSP Statistics for Stations in the Piscataqua River
(Refer to Figures 1 and 2 for sampling site locations)

	GB21	GB22	GBA10	GBA11.5	GB18
Count	30	30	30	30	30
Geomean	30.6	15.4	9.9	7.4	6.1
Est. 90th	122.8	82.3	48.9	30.0	26.0
Class.	P	P	P	P	P

P = Prohibited

Bellamy River

The Bellamy River growing area stretches from the head-of-tide in Dover to the mouth of the River at the Route 4/Scammel Bridge (Figure 10). A sanitary survey report was issued for this area in October 2005, classifying the northern portion (161 acres) as Prohibited and the southern portion (276 acres) as Conditionally Approved.

NSSP statistics for Bellamy River sites are presented in Table 6. All sites show relatively low bacteria levels consistent with the area's Conditionally Approved classification, which includes a rainfall closure condition of one inch.

Table 6: NSSP Statistics for Stations in the Bellamy River
(Refer to Figure 2 for sampling site locations)

	GB2	GB33	GB34
Count	30	30	30
Geomean	5.8	7.3	5.6
Est. 90th	28.1	33.4	24.4
Class.	CA	CA	P

P = Prohibited, CA = Conditionally Approved

Little Harbor/Back Channel

The Little Harbor and Back Channel growing areas (Figure 11) include 513 acres of Prohibited/Safety Zone around the Portsmouth wastewater treatment plant outfall and Wentworth Marina, 93 acres of Restricted waters upstream of Sheafes Point, 198 acres of Conditionally Approved waters in Little Harbor, and 96 acres of Prohibited/Unclassified waters in Sagamore Creek upstream of the Route 1A bridge.

NSSP statistics for Little Harbor sites are presented in Table 7. Fecal coliform data in Little Harbor meet Conditionally Approved criteria (0.50-inch rainfall criterion, seasonal closures for boat sewage concerns). Note that several of the sites in Table 7, namely the "LHB" sites, are relatively

new boat stations, having been created in 2001. Seasonal closures for boat sewage are based on weekly surveys of numbers of boats capable of discharging sewage, and the capacity of surrounding waters to dilute potential discharges to safe levels.

Table 7: NSSP Statistics for Stations in Little Harbor
(Refer to Figure 3 for sampling site locations)

	LHB1	LHB2	LHB13	LHB6	T14	T7
Count	27	28	28	27	30	30
Geomean	4.0	3.7	4.9	4.3	13.7	26.1
Est. 90th	13.1	8.5	14.6	15.7	71.7	172.4
Class.	N	N	N	N	R	R

N = New, R = Restricted

NSSP statistics for Back Channel sites are presented in Table 8. Fecal coliform data generally meet Conditionally Approved criteria at some sites, although all of Back Channel is classified as part of a Prohibited/Safety Zone around the Portsmouth wastewater treatment facility outfall. The reader should note that at the start of 2005, LHB9 was deemed to be of limited value and was discontinued; thus, it does not appear in Table 8.

Table 8: NSSP Statistics for Stations in Back Channel
(Refer to Figure 3 for sampling site locations)

	LHB16	LHB5	LHB8
Count	27	26	27
Geomean	4.5	3.8	4.7
Est. 90th	18.3	9.6	13.7
Class.	N	N	N

N = New

Atlantic Coast

The Atlantic Coast growing area extends to the three-mile limit under the state's jurisdiction and includes the New Hampshire waters around the Isles of Shoals (Figure 13). The growing area includes 38,979 acres of Approved waters, with several small closures around actual and potential pollution sources.

NSSP statistics for Atlantic Coast shore sites are presented in Table 9. As discussed in the 2004 DES Shellfish Program annual report, a Prohibited area was established around site AC3 in 2004, with new monitoring site AC3B created at the boundary. The required minimum thirty samples have been collected, and indicate that water quality on the boundary appears to be consistent with Approved criteria. The official Annual Report for this growing area, to be published in spring 2006, will recommend a classification change in this area back to "Approved."

Table 9: NSSP Statistics for Stations on the Atlantic Coast/Shore Sites
(Refer to Figures 4 and 5 for sampling site locations)

	AC1A	AC2	AC3	AC3A	AC4C	AC4D	AC10	AC5A	AC6G	AC7B	AC8
Count	27	30	30	18	18	16	30	30	30	30	30
Geomean	3.7	4.2	6.6	4.9	5.8	5.1	3.2	4.8	3.6	4.1	6.9
Est. 90th	17.1	16.6	58.4	24.1	47.8	37.0	9.6	27.1	10.9	15.9	38.0
Class.	N	A	R	N	N	N	A	A	A	A	A

N = New, A = Approved, R = Restricted

While the classification of Atlantic waters largely relies on the water sampling conducted at the shoreline sites (due to their proximity to potential/actual pollution sources), the DES continues to conduct sampling at boat sites as well. With the exception of ACB20 and ACB22, each of these sites is paired with a corresponding shore site and is located approximately 500 - 1000 feet from shore. Site ACB20 is located well offshore, approximately one nautical mile south of White Island. ACB22 is located at a relatively new aquaculture site in the open ocean, near the Rye/North Hampton border. Statistics for these sites (Table 10) show compliance with Approved criteria.

Table 10: NSSP Statistics for Stations on the Atlantic Coast/Boat Sites
(Refer to Figures 4 and 5 for sampling site locations)

	ACB1A	ACB2	ACB3	ACB4	ACB5	ACB6	ACB7	ACB8	ACB20	ACB22
Count	19	30	30	30	30	30	30	30	30	11
Geomean	3.4	2.5	2.4	2.7	2.2	2.5	2.5	3.0	2.0	2.0
Est. 90th	13.4	6.8	5.6	6.3	3.7	4.4	4.7	6.9	2.0	2.0
Class.	N	A	A	A	A	A	A	A	A	N

N = New, A = Approved

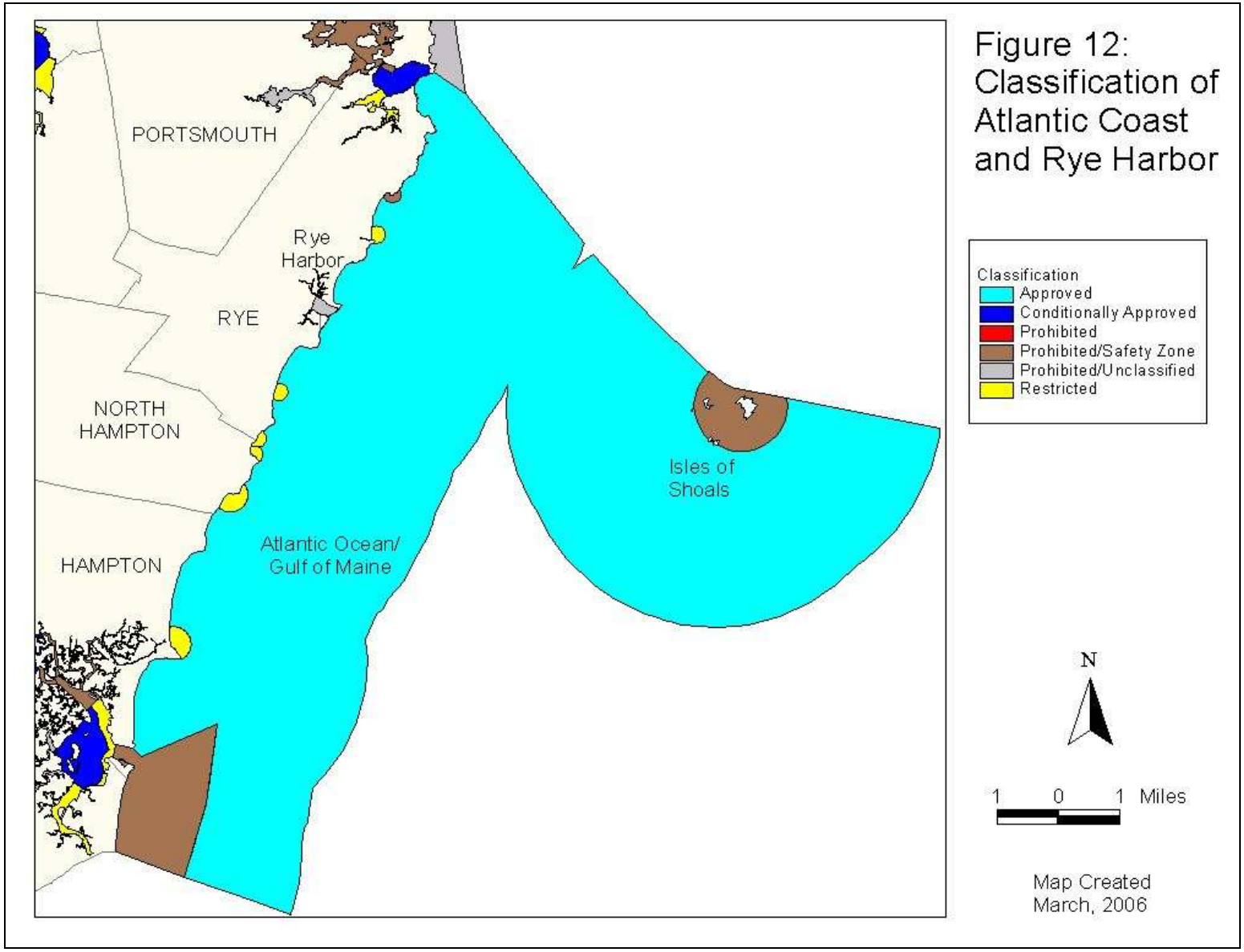
Rye Harbor

The Rye Harbor growing area includes 47 acres of water, all of which are Prohibited/Unclassified (Figure 13). NSSP statistics for Rye Harbor sites are presented in Table 11. Site RH4 was deemed to be of limited value, and was discontinued at the start of the 2005 sampling season. Site RH1, located in a tributary on the south side of the harbor, continues to show high and quite variable fecal coliform levels. Pollution source investigations by the DES Watershed Assistance Section are still ongoing in this area.

Table 11: NSSP Statistics for Stations in Rye Harbor
(Refer to Figure 4 for sampling site locations)

	RH1	RH2	RH3
Count	30	30	30
Geomean	15.5	7.4	4.7
Est. 90th	168.1	40.8	22.8
Class.	R	A	A

R = Restricted, A = Approved


PORTSMOUTH
Rye Harbor
RYE
NORTH HAMPTON
HAMPTON
Atlantic Ocean/ Gulf of Maine
Isles of Shoals
Figure 12: Classification of Atlantic Coast and Rye Harbor
Classification
Approved
Conditionally Approved
Prohibited
Prohibited/Safety Zone
Prohibited/Unclassified
Restricted
N
1 0 1 Miles
Map Created March, 2006

Hampton/Seabrook Harbor

The Hampton/Seabrook Harbor and Tributaries growing area encompasses 1,067 acres, including 474 acres classified as Conditionally Approved, 264 acres classified as Restricted, 208 acres classified as Prohibited/Safety Zone, and 121 acres classified as Prohibited/Unclassified (Figure 13).

NSSP statistics for Hampton/Seabrook Harbor sites and for the Hampton Falls River/Taylor River sites are presented in Table 12 and 13, respectively. The conditions under which harvesting is allowed in this area are quite restrictive, including a shortened season of November-May, and a rainfall closure threshold of 0.25 inches. Under these conditions, all sites meet Conditionally Approved criteria. Work to re-evaluate the current classification of all areas of the harbor is ongoing. A sanitary survey report is scheduled for completion in 2006.

The reader should note that two historical monitoring sites were dropped from the 2005 sampling program. Site HH17 was eliminated because a large-scale dredging operation relocated the channel in which HH17 was located. Because this site was deemed to be of limited value for the program, it was not replaced. Site HH32 had been located in the Hampton Falls River, but was dropped in 2005 when a statistical analysis showed no statistically significant results between HH32 and HH34.

Table 12: NSSP Statistics for Stations in Hampton/Seabrook Harbor
(Refer to Figure 6 for sampling site locations)

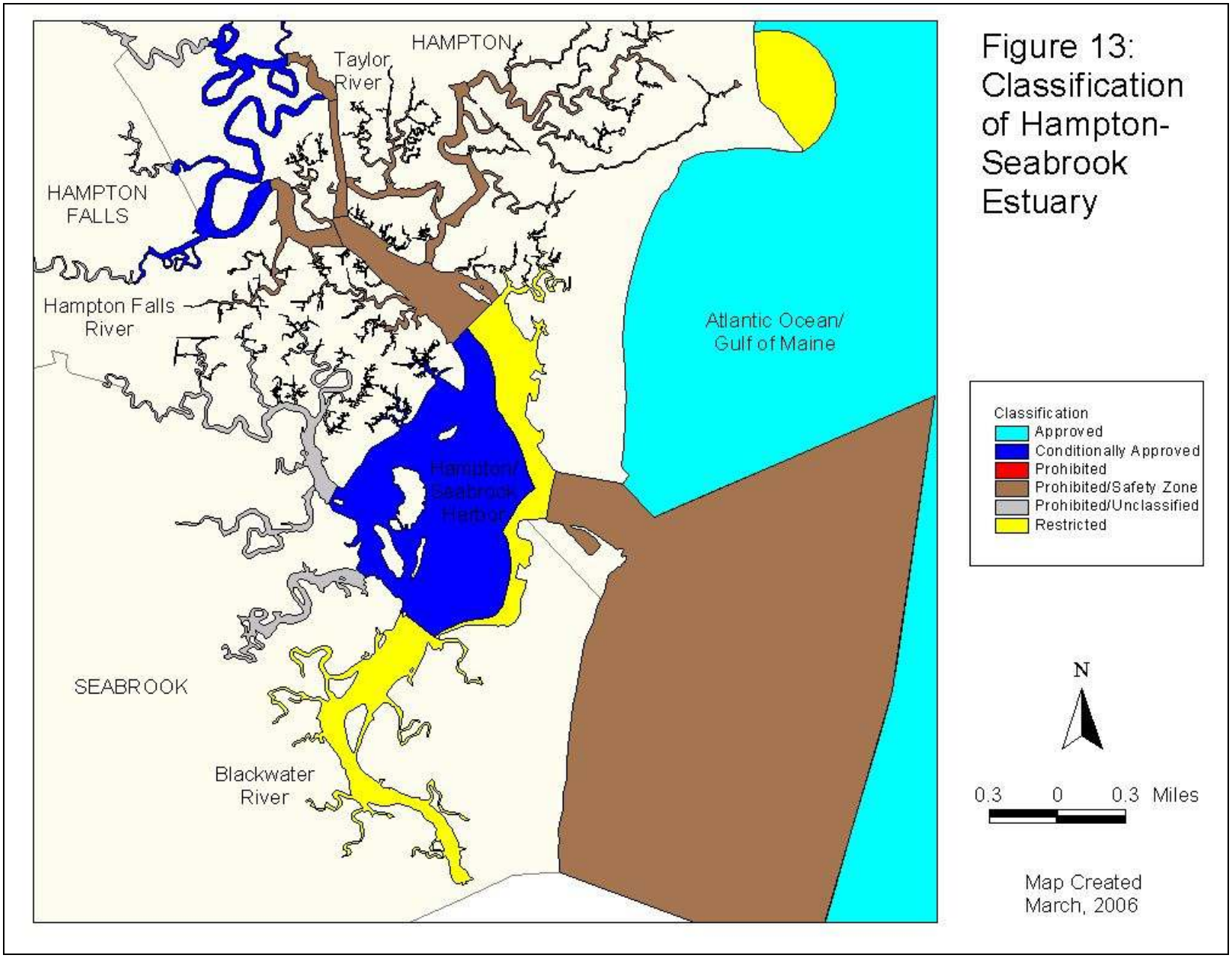
	HH10	HH11	HH12	HH18	HH19	HH1A	HH2B	HH5B	HH5C
Count	30	30	30	30	30	30	30	30	30
Geomean	3.1	3.5	3.7	3.2	3.3	4.3	4.0	3.8	3.2
Est. 90^{th}	9.3	8.8	12.6	8.2	11.4	11.9	14.3	11.2	7.9
Class.	A	A	A	A	A	A	A	A	A

A = Approved

Table 13: NSSP Statistics for Stations in Hampton Falls and Taylor Rivers
(Refer to Figure 6 for sampling site locations)

	HH30	HH31	HH33	HH34	HH35	HH36	HH37
Count	30	29	30	30	22	16	16
Geomean	4.4	4.9	5.7	3.6	5.0	6.8	4.7
Est. 90^{th}	12.8	18.7	21.5	8.6	23.3	21.6	19.7
Class.	A	A	A	A	N	N	N

A = Approved, N = New

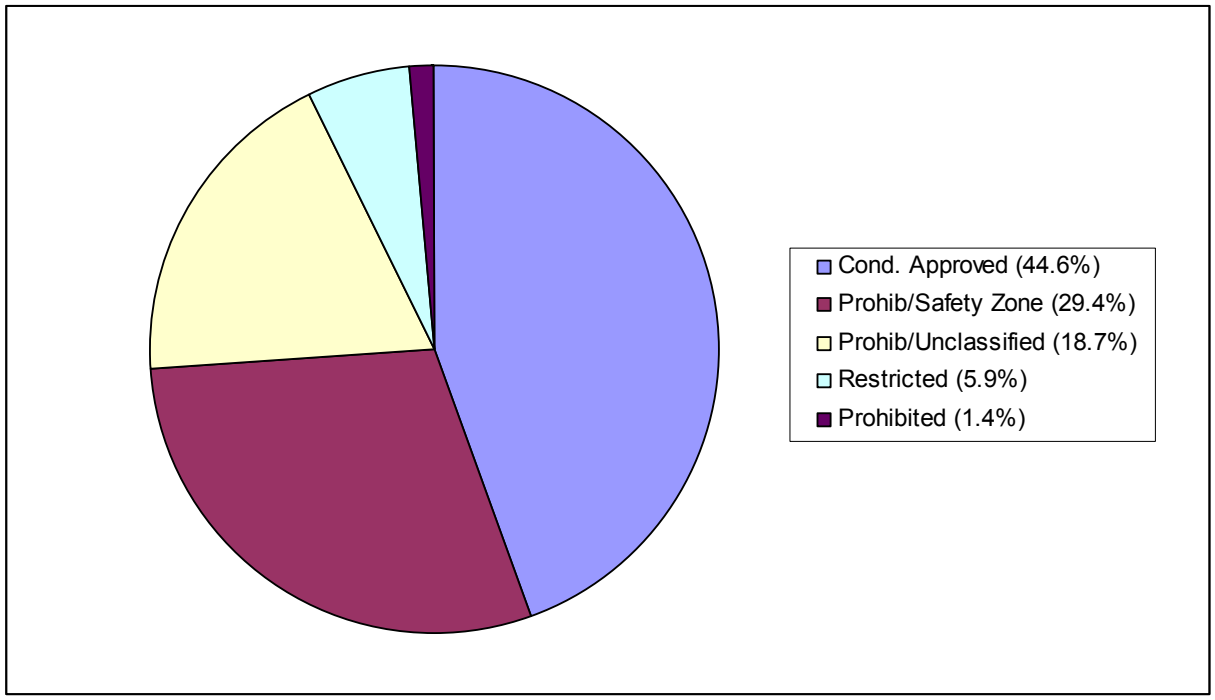

HAMPTON
Taylor River
HAMPTON FALLS
Hampton Falls River
Atlantic Ocean/ Gulf of Maine
Hampton/ Seabrook Harbor
SEABROOK
Blackwater River
Figure 13: Classification of Hampton-Seabrook Estuary
Classification
Approved
Conditionally Approved
Prohibited
Prohibited/Safety Zone
Prohibited/Unclassified
Restricted
N
0.3 0 0.3 Miles
Map Created March, 2006

CLASSIFICATION SUMMARY

Summary of 2005 Classifications

A summary of estuarine acreage, grouped by classification in 2005, is given in Figure 14. Of the 11,502 acres of estuarine waters, 44.6 percent are open for harvesting (46.6 in 2004, 48.5 in 2003, 38.4 percent in 2002), while 36.7 percent (29.4 percent in 2004, 22.9 percent in 2003, 18.1 percent in 2002) are closed because of identified water quality problems or proximity to wastewater treatment plant outfalls and marinas. The establishment of new Prohibited/Safety Zone areas in the Upper Piscataqua River, Upper Little Bay, and Lower Little Bay account for most of the increase. The remaining 18.7 percent (24 percent in 2004, 28.6 percent in 2003, 43.6 percent in 2002) is currently unclassified. DES intends to reduce the unclassified area to approximately 15 percent by the end of 2006.

Figure 14: 2005 Estuarine Shellfish Water Classifications

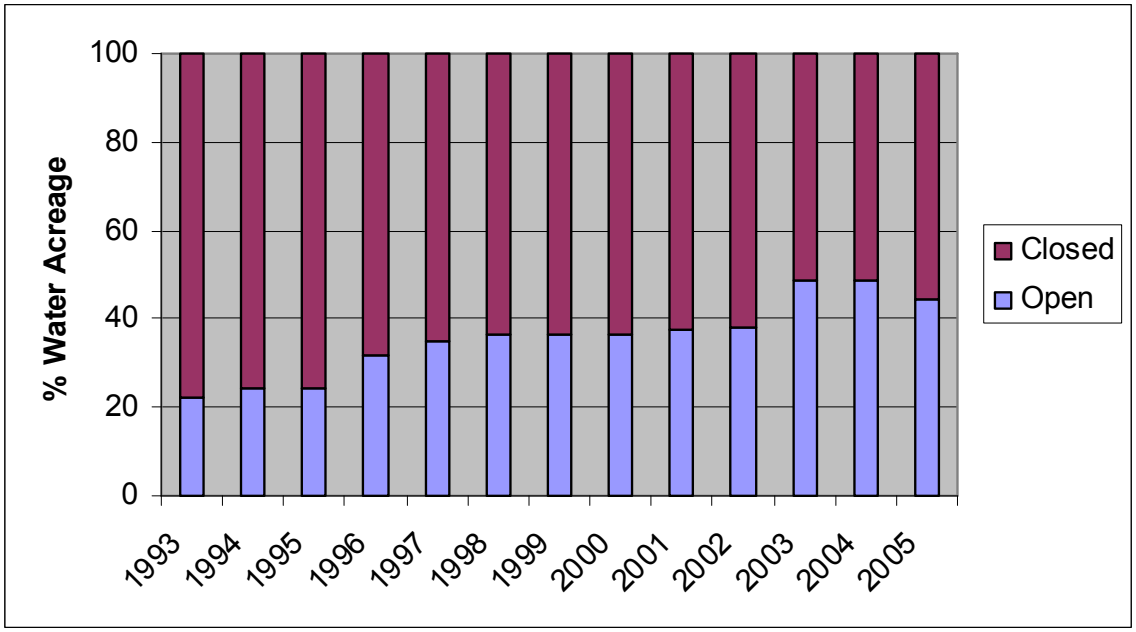


Status and Trends of Acres Open for Harvest

Since 1993, a great deal of effort has been focused on opening shellfish beds for harvesting. The most recent opening involved approximately 275 acres on the Bellamy River in the fall of 2005. Since DES was given responsibility for classifying shellfish waters in 1999, over 600 acres of previously closed estuarine waters, and nearly 40,000 acres of coastal waters, have been reopened for harvesting.

Despite the overall success, the actual acreage of estuarine waters open for harvest has decreased in recent years (Figure 15). Nearly 190 acres were closed in the vicinity of several small tributaries to Great Bay because of water quality concerns, all of which are under active investigation. Approximately 520 acres were permanently closed in two areas of Little Bay to eliminate bay-wide seasonal closures relating to boat sewage risk. Although this management action reduced the acreage open to harvesting, the elimination of area-wide seasonal closures actually increased harvesting opportunities by increasing the number of open days for all other areas.

Figure 15: Trends in Estuarine Shellfish Water Openings, 1993-2005



Open/Closed Acre-Days (by Area)

While tracking the number of acres of shellfish waters is useful in measuring progress to open shellfish waters, it does not give a completely accurate picture of how often shellfish waters are actually open for harvesting. Nearly all shellfish waters are subject to temporary closures due to rainfall conditions, wastewater treatment plant upsets, and other factors. A more accurate measure of how frequently the shellfish areas are open for harvesting is to compare the number of days the flats *were* open to the number of days the flats *could be* open.

For this analysis, all growing waters listed in Appendix 1 were categorized as a softshell clam area or an oyster area. Clam areas in 2005 could be open for a total of 40 days (Saturdays for the clamming season, defined by New Hampshire Fish and Game as the day after Labor Day to end of May), while oyster areas in 2005 could be open for a total of 303 days (all days of the week for the oystering season, defined by New Hampshire Fish and Game as all months except July and August. Note that the F&G ban on oyster harvesting through winter ice is not considered in the 303 day figure due to year-to-year variations in the spatial and temporal extent of ice cover). By multiplying these numbers by the acreage values for each growing area and summing the total, a

total possible acre-day value is derived. DES Shellfish Program records for the harvesting season were then used to determine the actual number of open days for each growing area, and similar calculations were performed to determine total actual acre-days open. For all acres of estuarine growing waters, there were 1,761,747 possible open acre-days. The actual number of open acre-days was 774,934, or 40 percent of the total (a decrease over the 52 percent figure calculated for 2004). There were several reasons for the decrease, but perhaps the most important was the very wet spring and fall of 2005. Several heavy rainfall events kept many areas closed for extended periods of time. In some cases these rainfall events led to sewage overflows from municipal wastewater plants and/or sewage collection infrastructure, which exacerbated the closures. About three percent of the 60 percent closed acre-day statistic can be attributed to three new closed areas in Great Bay, which took effect at the beginning of 2005. Calculations for selected open areas (Hampton/Seabrook, Great Bay, Little Bay, and Little Harbor) are presented in Table 14.

Table 14: Percent Open Acre-Days for the Conditionally Approved Sections of Hampton/Seabrook, Great Bay, Little Bay, and Little Harbor for Calendar Year 2005

Area	Water Acres (conditionally approved only)	Possible # of Open Days	Actual # of Open Days	Possible Acre-Days Open	Actual Acre-Days Open	%Actual Acre-Days Open
Hampton/Seabrook (clam)	481	40	15	19231	7212	37.5
Great Bay (oyster)	2850	303	253	863482	720991	83.5
Little Bay (clam)*	1323	40	9-18			53-63
Little Harbor (clam)	198	40	15	7919	2970	37.5

*Little Bay Classification was amended in July 2005 to include some new permanently prohibited acreage and to eliminate seasonal closures. Different areas had differing numbers of acreage and days open.

CONCLUSIONS AND WORK FOR 2006

The DES Shellfish Program has responsibility for classifying the shellfish growing waters of the State of New Hampshire. Of the 11,502 acres of estuarine waters, 81 percent are classified, while 19 percent are unclassified. On an acreage-only basis, 44.6 percent are currently open for harvesting, while on an acre-day basis 40 percent were open in 2005, down from 52 percent in 2004 because of an unusually high number of heavy rainfall and sewage overflow events. All of the 42,108 acres of Atlantic coastal waters are classified, with 93.3 percent of all acres open for harvesting.

One of the most severe episodes of Paralytic Shellfish Poisoning in recent history began in early May, resulting in closure of offshore waters for 85 days (May 5 – July 26), and nearshore Atlantic waters for 65 days (May 19 – July 21). Nearshore harvesting of surf clams was closed on May 19, and remained closed until December because of persistently high toxin levels, coupled with a series of unusually heavy fall rains.

There was an unusually large number of heavy rainfall events in both spring and fall in 2005, some of which caused sewage overflows from municipal wastewater treatment facilities and/or sewage collection infrastructure. Area-wide closures occurred in late March/early April, as well as in May. A four-inch rainstorm on October 8, 2005 caused an area wide closure, which was prolonged by several more large rainfalls and associated sewage overflows in October, November, and December.

Routine water sampling data collected over the last several years, including the nearly 650 samples collected during the course of 47 sampling trips in 2005, support the current classifications of all waters currently open for harvesting. New sanitary surveys for Little Bay and the Bellamy River were completed, resulting in new areas open for harvesting. Sanitary survey work in 2006 will focus on completing projects in the Upper Piscataqua River, Cocheco River, and Salmon Falls River, as well as in Hampton/Seabrook Harbor. Work to classify the Lower Piscataqua River will begin in 2006 with a dye/dilution study of the Kittery, Maine wastewater treatment facility. Additional studies and effort will be necessary to complete the classification of the Lower Piscataqua, but much of this work will extend beyond 2006.

APPENDIX 1
2005 Shellfish Water Classification and Acreage

Note: recalculation of acreage using the state GIS system to incorporate small salt marsh creeks/flats and refine surface water delineations in various areas resulted in a minor change in overall acreage from 2004 values. Also note that Maine waters (2385.35 acres) in the Piscataqua River, Salmon Falls River, and Portsmouth Harbor are not listed.

AREA	WATERBODY UNIT	CLASSIFICATION	OPEN/ CLOSED	WATER TYPE	WATER ACRES
ATLANTIC	Atlantic Ocean	Approved	OPEN	Ocean	39272.21
COAST	Bass Beach	Restricted	CLOSED	Ocean	21.98
	Chapel Brook	Restricted	CLOSED	Ocean	21.34
	Eel Pond	Restricted	CLOSED	Ocean	32.18
	Little River	Restricted	CLOSED	Ocean	75.98
	Parsons Creek	Restricted	CLOSED	Ocean	33.14
	North Beach	Restricted	CLOSED	Ocean	83.81
	Seabrook WWTP out.	Prohibited/Safety Zone	CLOSED	Ocean	1739.71
	Star Island WWTP out.	Prohibited/Safety Zone	CLOSED	Ocean	803.86
	Wallis Sands WWTP out.	Prohibited/Safety Zone	CLOSED	Ocean	23.71
	Rye Harbor	Prohibited/Unclassified	CLOSED	Estuary	63.92
LITTLE	Back Channel	Prohibited/Safety Zone	CLOSED	Estuary	421.64
HARBOR	Upper Sagamore Creek	Prohibited/Unclassified	CLOSED	Estuary	95.86
AND BACK	Lower Sagamore Creek	Prohibited/Safety Zone	CLOSED	Estuary	76.24
CHANNEL	Little Harbor	Conditionally Approved	OPEN	Estuary	197.98
	Wentworth Marina	Prohibited/Safety Zone	CLOSED	Estuary	14.73
	Witch Creek	Restricted	CLOSED	Estuary	93.34
GREAT BAY	Lamprey River	Prohibited/Safety Zone	CLOSED	Estuary	108.89
TRIBUTARIES	Squamscott River	Prohibited/Safety Zone	CLOSED	Estuary	306.51
	Winnicut River	Restricted	CLOSED	Estuary	125.83
	Bellamy River North	Prohibited	CLOSED	Estuary	160.74
	Bellamy River South	Conditionally Approved	OPEN	Estuary	275.83
	Oyster River	Prohibited/Safety Zone	CLOSED	Estuary	285.52
	Oyster River Tribs	Prohibited/Unclassified	CLOSED	Estuary	11.24
	Cocheco River	Prohibited/Unclassified	CLOSED	Estuary	175.03
	Salmon Falls River	Prohibited/Unclassified	CLOSED	Estuary	181.22
GREAT BAY	Great Bay	Conditionally Approved	OPEN	Estuary	2849.78
	Great Bay	Prohibited/Safety Zone	CLOSED	Estuary	1183.85
	Fabyan Point	Restricted	CLOSED	Estuary	9.13
	Pickering Brook	Restricted	CLOSED	Estuary	132.80
	Crommet Creek	Restricted	CLOSED	Estuary	40.58
LITTLE	Upper Little Bay	Conditionally Approved	OPEN	Estuary	830.80
BAY	L. Little Bay GS Bridge	Conditionally Approved	OPEN	Estuary	57.44
	Lower Little Bay	Conditionally Approved	OPEN	Estuary	350.60
	Upper Little Bay	Conditionally Approved	OPEN	Estuary	83.76
	L.Little Bay Marina SZ	Prohibited/Safety Zone	CLOSED	Estuary	293.5
	Adams Pt Mooring SZ	Prohibited/Safety Zone	CLOSED	Estuary	27.81
	Adams Pt Trib	Restricted	CLOSED	Estuary	6.406

HAMPTON HARBOR AND TRIBUTARIES	Taylor River	Prohibited/Safety Zone	CLOSED	Estuary	9.44
	Taylor River	Conditionally Approved	OPEN	Estuary	41.68
	Taylor River	Prohibited/Unclassified	CLOSED	Estuary	21.14
	Hampton River SZ1	Prohibited/Safety Zone	CLOSED	Estuary	89.06
	Hmp Falls River (upp)	Conditionally Approved	OPEN	Estuary	45.37
	Hampton River 3	Conditionally Approved	OPEN	Estuary	386.92
	Hampton River Trib 3	Conditionally Approved	OPEN	Estuary	6.80
	Blackwater River	Restricted	CLOSED	Estuary	140.54
	Blind Creek SZ	Prohibited/Safety Zone	CLOSED	Estuary	12.43
	Blind Creek Trib SZ	Prohibited/Safety Zone	CLOSED	Estuary	8.44
	Browns River	Prohibited/Unclassified	CLOSED	Estuary	46.15
	Browns River Trib	Prohibited/Unclassified	CLOSED	Estuary	14.40
	Hmp Falls River	Prohibited/Unclassified	CLOSED	Estuary	11.06
	Hmp Falls River SZ (lwr)	Prohibited/Safety Zone	CLOSED	Estuary	28.03
	Hampton River 2	Restricted	CLOSED	Estuary	123.83
	Hampton River 2 Trib	Restricted	CLOSED	Estuary	4.05
	Hampton River Trib SZ1	Prohibited/Safety Zone	CLOSED	Estuary	9.96
	Hmp Falls River Trib SZ	Prohibited/Safety Zone	CLOSED	Estuary	10.27
	Hunts Island Creek	Prohibited/Unclassified	CLOSED	Estuary	15.99
	Mill Creek	Prohibited/Unclassified	CLOSED	Estuary	31.35
	Nudds Canal SZ	Prohibited/Safety Zone	CLOSED	Estuary	13.50
	Tide Mill Creek SZ1	Prohibited/Safety Zone	CLOSED	Estuary	21.66
	Tide Mill Creek SZ2	Prohibited/Safety Zone	CLOSED	Estuary	34.31
	Tide Mill Creek Trib SZ1	Prohibited/Safety Zone	CLOSED	Estuary	17.32
	Tide Mill Creek Trib SZ2	Prohibited/Safety Zone	CLOSED	Estuary	4.60
PISCATAQUA RIVER	Dover WWTF SZ	Prohibited/Safety Zone	CLOSED	Estuary	208.27
	Upper Piscataqua River	Prohibited/Unclassified	CLOSED	Estuary	142.98
	Upper Piscataqua River	Prohibited/Unclassified	CLOSED	Estuary	71.16
	Lower Piscataqua River	Prohibited/Unclassified	CLOSED	Estuary	712.25
	North Mill Pond	Prohibited/Unclassified	CLOSED	Estuary	78.70
	South Mill Pond	Prohibited/Unclassified	CLOSED	Estuary	16.18
PORTSMOUTH HARBOR	Portsmouth Harbor-NH	Prohibited/Unclassified	CLOSED	Estuary	461.29

APPENDIX 2
Fecal Coliform Data Used for Calculation of NSSP Statistics

GREAT BAY DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program (open status only), excluding data with antecedent (four-day) rainfall greater than 2.5 inches; and excluding data that failed standard Quality Assurance checks.

DATE	RAIN	GB16	GB4A	GB5	GB81	GB82	GB82A	GB83	GB83A	GB84
25-Feb-02	0.32	4.5	4	14						
20-Mar-02	0.54	4.5	49	4						
02-Apr-02	0.88	<2	<2	<2						
06-May-02	0.53	2	2	<2						
19-Jun-02	1.07	4	2	4.5						
18-Sep-02	0.79	<2	<2	<2						
14-Oct-02	0.94	2	<2	6.8						
14-Nov-02	1.19	33	13	23						
02-Dec-02	0	33	46	33						
25-Apr-03	0.74	2	2	<2						
03-Jun-03	0.69	49	79	23						
23-Sep-03	0.21	4.5	1.8	2						
06-Oct-03	0.53	<2	6.8	2						
12-Nov-03	0.11	17	23	7.8						
19-Nov-03	0	2	33	11						
08-Dec-03	0	17	7.8	2						
30-Mar-04	0.47	<2	13	2						
13-Apr-04	0.28	<2	2	4.5						
29-Apr-04	1.32	4.5	7.8	13						
07-Jun-04	0.03	2	11	2						
04-Oct-04	0.54	4.5	27	4.5	13					
26-Oct-04	0	4.5	8.3	6.8	7.8					
09-Nov-04	0.84	7.8	11	4.5	2					
22-Nov-04	0.1	<2	<2	2	4.5					
06-Dec-04	0	33	130	49	110					
13-Dec-04	0.63	49	36	22	49					
14-Apr-05	0.05	2	17	2	6.8	4.5	4	<2	2	2
12-May-05	0.13	<2	2	2	2	<2	6.8	7.8	<2	<2
29-Jun-05	0.07	6.5	33	6.8	49	7.8	17	4.5	2	2
03-Aug-05	0.19	<2	2	2	2	7.8	<2	<2	<2	<2
06-Sep-05	0.95	<2	<2	<2	<2	<2	<2	<2	2	1.8
08-Nov-05	0.26	7.8	11	4.5	33	13	33	33	70	33
Count		30	30	30	12	6	6	6	6	6
Geomean		4.9	7.8	4.7	9.3	4.9	6.3	4.6	3.6	3.1
Est 90th		20.9	41.6	17.2	60.4	13.3	27.2	19.2	23.2	13.7
Classification		A	A	A	N	N	N	N	N	N

LITTLE BAY DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program (open status only), excluding data with antecedent (four-day) rainfall greater than 2.5 inches, and excluding data that failed standard Quality Assurance checks.

DATE	RAIN	GB17	GB19	GB25	GB27	GB28	GB50	GB7A	GB7C
17-May-01	0.11	<2	<2	<2	<2	<2	<2	<2	
06-Sep-01	0.02	<2	<2	<2	4.5	<2	4.5	4.5	
10-Oct-01	0.09	2	<2	<2	<2	1.8	<2	17	
05-Nov-01	0.34	2	2	4.5	2	4	2	13	
10-Dec-01	0.00	<2	2	4.5	<2	<2	<2	4.5	
25-Feb-02	0.32	23	22	33	22	17	14	7.8	
20-Mar-02	0.54	13	7.8	13	27	4.5	17	79	
02-Apr-02	0.88	2	<2	6.8	2	<2	<2	<2	
06-May-02	0.53	<2	2	4.5	<2	<2	<2	<2	
18-Sep-02	0.79	2	2	4.5	<2	<2	<2	<2	
14-Oct-02	0.94	23	6.8	17	79	7.8	4.5	2	
14-Nov-02	1.19	33	130	33	79	17	23	23	
02-Dec-02	0	13	33	33	49	33	33	33	
25-Apr-03	0.74	7.8	6.8	49	<2	<2	4.5	4.5	
12-Nov-03	0.11	13	13	21	7.8	13	7.8	21	
19-Nov-03	0	2	23	4.5	6.8	4.5	13	6.8	
08-Dec-03	0	70	22	22	17	2	13	27	
30-Mar-04	0.47	33	2	17	17	4	4	4.5	
13-Apr-04	0.28	11	2	<2	2	4.5	2	4.5	
29-Apr-04	1.32	4.5	13	6.8	2	33	4.5	4.5	
26-Oct-04	0	6.8	7.8	6.8	1.8	21	4.5	<2	
09-Nov-04	0.84	4.5	6.8	2	4	2	<2	2	
22-Nov-04	0.1	2	2	2	<2	<2	<2	<2	
06-Dec-04	0	11	49	22	17	17	110	33	
13-Dec-04	0.63	13	6.8	49	49	6.8	23	33	
14-Apr-05	0.05	<2	<2	7.8	2	4.5	4.5	<2	<2
12-May-05	0.13	2	1.8	2	6.8	<2	7.8	<2	<2
29-Jun-05	0.07	2	4.5	<2	13	1.8	17	4.5	4
03-Aug-05	0.19	1.8	3.7	23	4	4	2	<2	2
06-Sep-05	0.95	<2	2	<2	<2	<2	<2	<2	49
08-Nov-05	0.26	6.1	17	2	70	4.5	6.8	31	4.5
Count		30	30	30	30	30	30	30	6
Geomean		5.5	5.9	7.5	6.8	4.6	5.7	6.3	4.4
Est 90th		22.6	26.7	31.8	37.5	15.4	22.2	28.0	21.4
Classification		A	A	A	A	A	A	A	N

PISCATAQUA RIVER DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program (open status only), excluding data with antecedent (four-day) rainfall greater than 2.5 inches, and data that failed standard Quality Assurance checks.

DATE	RAIN	GB18	GB21	GB22	GBA10	GBA 11 5
12-Apr-01	0.26	<2	7.8	2	23	4
17-May-01	0.11	2	130	33	13	<2
06-Sep-01	0.02	4.5	240	17	13	<2
10-Oct-01	0.09	<2	49	2	4.5	<2
05-Nov-01	0.34	2	130	31	11	4
10-Dec-01	0	4.5	6.8	2	<2	<2
25-Feb-02	0.32	23	23	7.8	6.8	33
20-Mar-02	0.54	13	33	7.8	4	2
02-Apr-02	0.88	<2	33	13	2	13
11-Apr-02	0.04				<2	2
06-May-02	0.53	2	33	23	23	2
18-Sep-02	0.79	1.8	26	4.5	<2	<2
14-Oct-02	0.94	23	23	7.8	11	23
14-Nov-02	1.19	49	49	79	49	23
02-Dec-02	0	2	23	13	23	13
25-Apr-03	0.74	4.5	33	4.5	<2	4
28-Apr-03	1.52	22	49	33	49	17
27-May-03	2.14	130	540	350	350	70
12-Nov-03	0.11	13	22	13	11	11
19-Nov-03	0	13	13	7.8	7.8	2
08-Dec-03	0	11	13	13	33	17
30-Mar-04	0.47	7.8	23	4.5	4.5	6.8
13-Apr-04	0.28	<2	49	79	33	4.5
29-Apr-04	1.32	4	17	13	7.8	4.5
26-Oct-04	0	4.5	4.5	13	4.5	13
09-Nov-04	0.84	2	22	23	4	1.8
22-Nov-04	0.1	<2	<2	2	<2	1.8
06-Dec-04	0	7.8			33	22
13-Dec-04	0.63	4.5	49	110	13	6.8
14-Apr-05	0.05	17	13	2	7.8	11
12-May-05	0.13	4.5	23	23	11	23
29-Jun-05	0.07	2	130	79	33	11
03-Aug-05	0.19	1.8	170	49	13	4.5
06-Sep-05	0.95	<2	79	33	4.5	1.8
08-Nov-05	0.26	13	49	46	22	33
Count		30	30	30	30	30
Geomean		6.1	30.6	15.4	9.9	7.4
Est 90th		26.0	122.8	82.3	48.9	30.0
Classification		A	R	R	R	A

BELLAMY RIVER DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program (open status only), excluding the following data: June, July and August; data with antecedent (three-day) rainfall greater than 1inch; data that failed standard Quality Assurance checks.

RAIN	DATE	GB2	GB33	GB34
0.00	10/10/00	<2	11	7.8
1.18	10/19/00			540
0.81	11/07/00	<2	<2	2
0.11	05/17/01	<2	2	2
0.02	09/06/01	2	49	<2
0.09	10/08/01			13
0.00	10/10/01	<2	<2	<2
0.10	11/05/01	2	13	4.5
0.00	12/10/01	<2	<2	2
0.00	02/25/02	79	6.8	11
0.54	03/20/02	49	79	49
0.77	04/02/02	2	<2	4
0.03	04/11/02	<2	<2	<2
0.00	05/06/02	<2	<2	2
0.79	09/18/02	4	7.8	4
0.94	10/14/02	4.5	4.5	17
0.26	10/23/02	4	<2	4
1.19	11/14/02	49	130	110
0.00	12/02/02	31	49	22
0.09	04/25/03	<2	<2	<2
1.43	04/28/03	7.8	130	22
0.11	11/12/03	17		
0.00	11/19/03	7.8	4.5	7.8
0.00	12/08/03	49	27	17
0.47	03/30/04	11	11	23
0.28	04/13/04	4.5	2	2
1.32	04/29/04	2	2	4.5
0.54	10/26/04	4.5	6.8	4.5
0	11/09/04	4.5	7.8	<2
0.84	11/22/04	2	6.8	<2
0	12/06/04	49	33	23
0.63	12/13/04	17	32	27
0.05	04/14/05	2	7.8	<2
0.00	05/12/05	11	22	7.8
0.95	09/06/05	2	4.5	2
0.26	11/08/05	23	33	79
Count		30	30	30
Geomean		5.8	7.3	5.6
Est 90th		28.1	33.4	24.4
Classification		A	P	A

LITTLE HARBOR DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program (open status only), excluding the following data: June, July and August; data with antecedent (two-day) rainfall greater than 0.5 inches; data that failed standard Quality Assurance checks. Note that sample collection at all boat ("LHB") sites began in May 2001. Samples prior to that date were collected from adjacent shore sites.

DATE	RAIN	LHB1	LHB13	LHB2	LHB6	T14	T7
19-Jan-01	0					4.5	<2
05-Feb-01	0					31	1.8
16-Apr-01	0					13	2
03-May-01	0	2	7.8	<2	7.8	79	49
29-Oct-01	0	2	7.8	<2	1.8	2	49
06-Nov-01	0.3	13	17	7.8	23	170	49
06-Dec-01	0.04	2	2	<2	4.5	23	240
22-Jan-02	0	2	2	9.2	4.5	33	46
06-Feb-02	0	7.8	4	<2	1.8	4.5	17
11-Mar-02	0.44	<2	<2	4	<2	11	33
08-Apr-02	0.01	4.5	2	4.5	<2	7.8	94
13-May-02	0.39	4.5	4.5	7.8	17	130	79
11-Dec-02	0		11	4.5		49	33
18-Mar-03	0	1.8	4.5	4	4.5	4.5	12
21-Apr-03	0	4	4.5	4	<2	13	26
21-May-03	0	<2	4.5	4.5	<2	110	110
27-Oct-03	0.48	11	33	7.8	13	79	170
17-Nov-03	0	2	<2	<2	2	13	31
02-Dec-03	0	4.5	4.5	4.5	<2	4	49
02-Feb-04	0	70	33	17	17	9.2	<2
01-Mar-04	0	14	4.5	6.1	4	13	2
09-Mar-04	0.03	1.8	2	<2	<2	23	2
03-May-04	0	4.5	6.8	<2	4	4.5	130
11-May-04	0.02	<2	<2	4.5	2	33	49
08-Nov-04	0.03	<2	<2	<2	<2	2	22
02-Feb-05	0	22	17	13	79	17	7.8
07-Mar-05	0	4	11	2	13	6.8	7.8
18-Apr-05	0	<2	<2	<2	<2	2	13
03-May-05	0.18	4.5	4.5	2	<2	13	23
01-Nov-05	0	4.5	4.5	2	7.8	4.5	110
14-Nov-05	0	2	4	<2	<2	2	240
Count		27	28	28	27	30	30
Geomean		4.0	4.9	3.7	4.3	13.7	26.1
Est 90th		13.1	14.6	8.5	15.7	71.7	172.4
Classification		N	N	N	N	R	R

BACK CHANNEL DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program (open status only), excluding the following data: June, July and August; data with antecedent (two-day) rainfall greater than 0.5 inches; data that failed standard Quality Assurance checks. Note that sample collection at all boat ("LHB") sites began in May 2001. Samples prior to that date were collected from adjacent shore sites.

RAIN	DATE	LHB16	LHB5	LHB8
0.00	05/03/01	2	4	<2
0.00	10/29/01	17	7.8	4.5
0.30	11/06/01	79	14	23
0.04	12/06/01	13	<2	4.5
0.00	01/22/02	<2	4	<2
0.00	02/06/02	2	1.8	<2
0.44	03/11/02	2	4	2
0.01	04/08/02	4.5	<2	7.8
0.39	05/13/02	6.1	7.8	6.8
0.00	12/11/02	7.8		13
0.00	03/18/03	<2	<2	7.8
0.00	04/21/03	2	4.5	2
0.00	05/21/03	<2	2	11
0.48	10/27/03	13	13	27
0.00	11/17/03	2	<2	4.5
0.00	12/02/03	7.8	4	4.5
0.00	02/02/04	79	<2	14
0.00	03/01/04	2	<2	<2
0.03	03/09/04	<2	7.8	13
0.00	05/03/04	4.5	4.5	4.5
0.02	05/11/04	2	2	<2
0.03	11/08/04	<2	2	7.8
0.00	02/02/05	4.5	13	4
0.00	03/07/05	11	4.5	4.5
0.00	04/18/05	<2	<2	<2
0.18	05/03/05	4.5	13	2
0.00	11/14/05	<2	1.8	2
Count		27	26	27
Geomean		4.5	3.8	4.7
Est 90th		18.3	9.6	13.7
Classification		N	N	N

ATLANTIC COAST (SHORE) DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program (open status only), excluding the following data: data with antecedent (three-day) rainfall greater than 2.5 inches; data that failed standard Quality Assurance checks.

RAIN	DATE	AC 1A	AC 3	AC 3A	AC 4D	AC 10	AC 5A	AC 6G	AC 7B	AC 8
0.12	07/23/03	<2	<2			<2	2	4.5	17	51
0.01	09/08/03	2	11			11	9.3	1.8	7.8	4.5
0.92	10/14/03	2	3.7			<2	27	6.8	<2	3
0.00	11/17/03	<2	<2			<2	<2	<2	2 17	
0.00	12/29/03	<2	4.5			<2	2	2	2 2	
0.00	02/03/04	2	<2	<2	2	<2	<2	1.8	2 6.8	
0.00	02/17/04	<2	<2	1.8	4.5	<2	<2	2	4 11	
0.16	02/24/04	<2	<2	13	<2	<2	<2	1.8	<2	1
0.00	03/15/04	<2	4	<2	<2	2	<2	<2	<2	4
0.03	04/19/04	<2	<2	<2		<2	4.5	<2	<2	<2
1.03	04/29/04	<2	2	<2	<2	<2	<2	2	<2	95
0.98	05/04/04	130	6.8	7.8	130	<2	79	13	17	7.8
0.00	06/14/04	<2	<2	<2	2	<2	2	2	<2	6
0.38	06/21/04	2	2	<2	<2	<2	<2	<2	<2	<2
0.01	07/06/04	2	3.6	<2	4.5	2	<2	11	11	<2
0.10	07/19/04	4.5	33	33	130	7.8	11	<2	6.8	3
2.13	08/23/04	4.5	2	13	49	7.8	13	49	49	9
0.47	09/01/04	2	2	2	13	4.5	13	17	17	4
0.00	10/11/04	21	49	49	2	46	<2	7.8	79	7.8
0.00	10/25/04	79	49	23		4.5	13	<2	1.8	6.4
0.78	11/03/04	<2	<2	<2	<2	<2	2	<2	<2	4.5
0.00	11/16/04	<2	<2	<2	2	<2	<2	<2	<2	<2
1.06	12/09/04	<2	130	33	2	<2	2	6.8	2	<2
0.00	02/01/05	4.5	33	2	<2	<1.8	13	17	170	
0.00	03/21/05	70	4.5	17	7.8	<2	130	49	<2	<2
0.12	04/11/05	<2	4.5	7.8	4.5	17	33	1.8	4.5	<2
0.93	05/02/05	<2	<2	<2	<2	<2	1.8	2	<2	<2
0.25	06/14/05	33	4	2	13	6.8	13	170	1.8	49
1.22	07/11/05	2	4	4.5	<2	<2	17	2	<2	2
0.00	09/12/05	<2	<2	<2	<2	2	<2	<2	13	1.8
0.03	11/02/05	4.5	2	<2	2	<2	<2	4.5	4.5	4.5
Count		30	30	26	24	30	30	30	30	30
Geomean		3.8	4.3	4.9	4.4	3.0	4.9	4.3	4.1	4.9
Est 90th		19.2	18.4	22.2	24.3	8.5	24.6	20.3	16.3	22.9
Classification		A	A	A	A	A	A	A	A	A

ATLANTIC COAST (BOAT) DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program (open status only), excluding the following data: data with antecedent (three-day) rainfall greater than 2.5 inches; data that failed standard Quality Assurance checks.

RAIN	DATE	ACB 1A	ACB2	ACB3	ACB4	ACB5	ACB6	ACB7	ACB8
0.26	05/14/01		<2	<2	<2	<2	<2	<2	<2
1.55	06/04/01		<2	<2	<2	<2	<2	4	<2
0.03	08/30/01		<2	<2	<2	<2	<2	<2	<2
0.08	09/20/01		4.5	2	11	13	4.5	7.8	2
0.00	10/03/01		2	<2	2	<2	2	<2	4.5
0.00	10/12/01		4.5	<2	1.8	<2	2	2	<2
0.90	05/20/02		<2	<2	2	4	7.8	<2	<2
1.27	06/25/02		<2	<2	1.8	<2	<2	2	4.5
0.00	08/05/02		<2	<2	<2	<2	<2	7.8	<2
0.00	09/09/02		<2	<2	17	<2	4.5	4.5	4.5
0.26	10/25/02		<2	<2	<2	<2	<2	<2	<2
0.00	12/18/02		4.5	17	<2	2	<2	2	4
1.05	05/15/03	2	2	<2	2	<2	<2	<2	<2
0.35	06/17/03	2	<2	<2	<2	<2	<2	<2	1
0.04	07/02/03	<2	<2	<2	<2	<2	<2	<2	17
0.00	07/07/03	<2	<2	<2	<2	<2	<2	<2	<2
0.44	08/12/03	33	110	<2	<2	<2	2	<2	<2
0.21	09/22/03	<2	<2	<2	<2	<2	<2	4.5	4.5
0.00	12/09/03	6.1	<2	34	<2	<2	<2	<2	<2
0.03	04/21/04	<2	<2	**<2**	<2	<2	<2	<2	1.8
0.59	05/17/04	4.5	1.8	**2**	11	<2	1.8	<2	4.5
0	06/17/04	<2	<2	**<2**	<2	<2	<2	<2	4.5
0.47	07/12/04	<2	<2	**<2**	<2	<2	4.5	<2	17
0.9	08/02/04	90	<2	4.5	<2	2	<2	<2	2
0	09/15/04	2	4.5	**<2**	<2	2	<2	<2	4
1.65	04/06/05	<2	2	<2	2	2	11	<2	4
0.22	05/17/05	<2	<2	<2	2	4.5	2	11	2
0.29	06/20/05	7.8	<2	<2	6.8	<2	1.8	2	6.8
0.19	07/05/05	<2	<2	<2	2	<2	<2	<2	4.5
0.00	08/08/05	<2	<2	<2	14	<2	<2	<2	2
0.27	09/19/05	2	<2	<2	2	2	4.5	<2	<2
Count		19	30	30	30	30	30	30	30
Geomean		3.4	2.5	2.4	2.7	2.2	2.5	2.5	3.0
Est 90th		13.4	6.8	5.6	6.3	3.7	4.4	4.7	6.9
Classification		N	A	A	A	A	A	A	A

ATLANTIC COAST (OFFSHORE) DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program (open status only), excluding the following data: data with antecedent (three-day) rainfall greater than 2.5 inches; data that failed standard Quality Assurance checks. Note: data censors not shown.

RAIN	DATE	ACB20	ACB22
0.03	08/30/01	<2	
0.08	09/20/01	<2	
0.00	10/03/01	<2	
0.00	05/08/02	<2	
0.90	05/20/02	<2	
1.27	06/25/02	<2	
0.00	09/09/02	<2	
0.26	10/25/02	<2	
1.18	11/15/02	<2	
1.05	05/15/03	<2	
2.14	05/28/03	<2	
0.04	07/02/03	<2	
0.00	07/07/03	<2	
0.00	08/28/03	<2	
0.21	09/22/03	<2	
0.00	10/20/03	<2	
0.00	12/10/03	<2	
0.03	04/21/04	<2	
0.02	05/12/04	<2	
0.59	05/17/04	<2	
0.00	06/17/04	<2	
0.47	07/12/04	<2	
0.90	08/02/04	<2	
0.00	09/15/04	<2	
1.65	04/06/05	<2	<2
0.22	05/17/06	<2	<2
0.37	06/20/05	<2	<2
0.19	07/05/05	<2	<2
0.00	08/08/05	<2	<2
0.27	09/19/05	<2	<2
0.00	12/05/05	<2	<2
	Count	30	7
	Geomean	2.0	2.0
	Est. 90th	2.0	2.0
	Classification	A	N

RYE HARBOR DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program (open status only), excluding the following data: June, July and August; data with antecedent (three-day) rainfall greater than 2.5 inches; data that failed standard Quality Assurance checks. Note: data censors not shown.

RAIN	DATE	RH1	RH2	RH3
0.14	05/23/00	33	<2	4.5
0.00	05/31/00	4.5	33	2
0.12	09/06/00	17	4.5	<2
0.00	10/25/00	34	1.8	<2
0.72	11/01/00	49	4.5	9.3
0.00	12/07/00	40	<2	
0.00	01/08/01	<2	<2	<2
0.00	04/26/01	31	2	4.5
0.00	05/01/01	9.3	2	<2
0.08	09/20/01	140	49	23
0.35	10/15/01	280	49	7.8
0.29	11/26/01	6.8	4.5	2
0.00	01/28/02	4.5	49	<2
0.00	03/25/02	3.6	<2	<2
0.02	04/22/02	4	13	<2
0.90	05/21/02	7.8	4	1.8
0.24	09/03/02	540	22	40
0.00	10/21/02	13	6.8	<2
1.53	11/19/02	170	23	130
0.00	03/12/03	<2	13	4.5
1.24	04/01/03	9.3	7.8	4
0.01	09/08/03	43	17	4.5
0.00	11/17/03	90	<2	2
0.00	02/03/04	1.8	1.8	2
0.00	03/15/04	2	<2	<2
0.03	04/19/04	7.8	2	2
0.98	05/04/04	2	17	11
0.47	09/01/04	540	240	72
0.00	10/11/04	70	49	23
0.00	02/01/05	2	<2	<2
0.00	03/21/05	<2	<2	<2
0.12	04/11/05	13	7.8	<2
0.00	09/12/05	170	13	2
0.03	11/02/05	<2	4.5	20
Count		30	30	30
Geomean		15.5	7.4	4.7
Est 90th		168.1	40.8	22.8
Classification		R	A	A

HAMPTON/SEABROOK HARBOR DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program (open status only), excluding the following data: June, July, August, September, and October; data with antecedent (three-day) rainfall greater than 0.25 inches; data that failed standard Quality Assurance checks.

RAIN	DATE	HH 10	HH 11	HH 12	HH 35	HH 18	HH 19	HH 1A	HH 2B	HH 5B	HH 5C
0.00	01/22/01	<2	<2	4.5		<2	<2	<2	<2	2	<2
0.00	02/20/01	1.8	2	4.5		2	<2	<2	4	2	4
0.06	04/23/01	2	<2	2		1.8	2	<2	2	<2	1.8
0.00	11/13/01	7.8	<2	13		4.5	6.8	13	4	4.5	2
0.00	12/05/01	2	4.5	4.5		<2	17	4	4.5	2	<2
0.00	12/11/01	2	4.5	<2		2	<2	4.5	<2	2	<2
0.00	01/24/02	<2	4	2		<2	2	4.5	4.5	7.8	4.5
0.01	05/06/02	<2	<2	<2		<2	<2	<2	1.8	<2	2
0.00	05/08/02	<2	7.8	<2		2	<2	<2	<2	<2	<2
0.00	12/10/02	2	<2	4		1.8	1.8	<2	4.5	7.8	2
0.00	12/19/02	6.8	6.8	2	1.9	6.8	2	11	2	<2	11
0.00	03/17/03	<2	1.8	<2	2	<2	<2	<2	<2	<2	2
0.21	03/28/03	<2	4.5	<2	7.8	1.8	2	4.5	<2	<2	<2
0.11	04/09/03	<2	4.5	1.8	2	<2	4.5	7.8	2	7.8	4.5
0.15	11/12/03	2	4.5	13	2	23	4.5	4.5	49	49	13
0.00	11/18/03	6.8	2	13	33	4	7.8	4.5	23	4.5	2
0.03	12/04/03	2	<2	<2	79	<2	<2	2	2	<2	<2
0.00	12/09/03	12	17	2	2	3.6	4	4	2	2	2
0.00	12/10/03	4.5	4.5	<2	4	4.5	2	13	7.8	13	2
0.57	02/09/04	2	2	4.5	14	2	2	2	11	13	4.5
0.00	02/18/04	2	<2	11	7.8	6.8	4	7.8	13	<2	4.5
0.00	03/03/04	<2	2	2	2	<2	2	<2	2	<2	2
0.01	05/13/04	<2	<2	<2	2	<2	<2	<2	<2	4.5	<2
0.14	11/02/04	79	17	79	31	70	110	28	23	4	13
0.00	11/16/04	6.1	13	13	33	7.8	33	2	46	7.8	17
0.00	12/16/04	2	4.5	4	2	2	4.5	13	4.5	13	4.5
0.00	02/09/05	11	13	<2	2	17	2	6.8	1.8	6.8	11
0.00	02/28/05	<2	1.8	17	13	<2	<2	5.6	<2	2	2
0.00	03/22/05	<2	<2	<2	<2	1.8	<2	<2	<2	2	<2
0.00	04/19/05	2	<2	2	<2	<2	2	<2	<2	2	<2
0.00	11/15/05	4.5	2	4.5	4.5	4	<2	4.5	2	<2	2
0.00	12/12/05	1.8	2	2	2	4.5	2	17	6.8	17	4.5
Count		30	30	30	22	30	30	30	30	30	30
Geomean		3.1	3.5	3.7	5.0	3.2	3.3	4.3	4.0	3.8	3.2
Est. 90th		9.3	8.8	12.6	23.3	8.2	11.4	11.9	14.3	11.2	7.9
Classification		A	A	A	A	A	A	A	A	A	A

HAMPTON FALLS RIVER AND TAYLOR RIVER DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program (open status only), excluding the following data: June, July, August, September, and October; data with antecedent (three-day) rainfall greater than 0.25 inches; data that failed standard Quality Assurance checks.

RAIN	DATE	HH30	HH31	HH33	HH34	HH36	HH37
.00	01/22/01	<2	<2	<2	<2		
0.00	02/20/01	2	7.8	4.5	<2		
0.06	04/23/01	<2	2	2	2		
0.00	11/13/01	4	7.8	4.5	7.8		
0.00	12/11/01	2	2	2	4		
0.00	01/24/02	13	2	4.5	2		
0.01	05/06/02	<2	<2	13	<2		
0.00	05/08/02	13	4.5	2	4		
0.00	12/10/02	17	23	4	2		
0.00	12/19/02	4.5	17	49	4.5		
0.00	03/17/03	<2	<2	<2	<2		
0.21	03/28/03	4	4	2	4.5		
0.11	04/09/03	4.5	2	13	4.5	13	2
0.15	11/12/03	13	21	7.8	6.1	33	33
0.00	11/18/03	3.7	2	2	7.8	23	17
0.03	12/04/03	<2	2	2	2	4.5	2
0.00	12/10/03	4	13	2	4	4	13
0.00	02/18/04	2	2	4.5	14	6.8	1.8
0.00	03/03/04	2	2	<2	<2	<2	2
0.01	05/13/04	2	<2	2	<2		
0.14	11/02/04	2	2	4.5	2	4.5	4.5
0.00	11/15/04	33	22	23	23	7.8	33
0.00	12/16/04	7.8	2	7.8	2	4.5	2
0.00	02/09/05	7.8	2	23	7.8	7.8	2
0.00	02/28/05	7.8		6.5	4.5	4.5	<2
0.00	03/22/05	<2	4.5	4.5	4.5	<2	<2
0.00	04/19/05	<2	2	4.5	1.8	<2	2
0.00	11/15/05	2	11	49	2	17	17
0.00	12/12/05	13	31	4.5	7.8	23	6.8
Count		30	30	30	30	16	16
Geomean		4.4	4.7	5.7	3.6	6.8	4.7
Est 90th		12.8	18.1	21.5	8.6	21.6	19.7
Classification		A	A	A	A	N	N

Appendix 3
2005 Shellfish Tissue Fecal Coliform Data

Note: Data sorted by waterbody, then by date.

AREA	STATION	DATE	WFC	MEAT FC	SPECIES	PROJTYPE
GREAT BAY ESTUARY	GBSP1	28-Mar-05	=13	=78	softshell clam	BASELINE TISSUE
	GBSP1	30-Mar-05	=130	=490	softshell clam	EMERGENCY CLOSURE
	GBSP1	04-Apr-05	=33	=1300	softshell clam	EMERGENCY CLOSURE
	GBSP1	07-Apr-05	=23	=330	softshell clam	EMERGENCY CLOSURE
	GBSP1	11-Apr-05	=49	=130	softshell clam	EMERGENCY CLOSURE
	GBSP1	03-May-05	<2	=45	softshell clam	EMERGENCY CLOSURE
	GBAP1	31-May-05	=13	=330	american oyster	EMERGENCY CLOSURE
	GBSP1	06-Jun-05	=240	=1700	softshell clam	EMERGENCY CLOSURE
	GBAP1	07-Jun-05	=17	=230	american oyster	EMERGENCY CLOSURE
	GBSP1	06-Sep-05	<2	=45	softshell clam	BASELINE TISSUE
	BRRC1	12-Sep-05	<2	=20	softshell clam	BASELINE TISSUE
	LBFP1	11-Oct-05	>1600	=17000	razor clam	EMERGENCY CLOSURE
	BRRC1	11-Oct-05	=540	=4900	softshell clam	EMERGENCY CLOSURE
	GBSP1	11-Oct-05	>1600	=13000	softshell clam	EMERGENCY CLOSURE
	LBFP1	17-Oct-05	=170	=1700	razor clam	EMERGENCY CLOSURE
	BRRC1	17-Oct-05	=350	=1300	softshell clam	EMERGENCY CLOSURE
	GBSP1	17-Oct-05	=1600	=3100	softshell clam	EMERGENCY CLOSURE
	LBFP1	19-Oct-05	=49	=1300	razor clam	EMERGENCY CLOSURE
	BRRC1	19-Oct-05	=33	=490	softshell clam	EMERGENCY CLOSURE
	GBSP1	19-Oct-05	=94	=3300	softshell clam	EMERGENCY CLOSURE
	LBFP1	31-Oct-05	=7.8	=310	softshell clam	EMERGENCY CLOSURE
	BRRC1	31-Oct-05	=4.5	=78	softshell clam	EMERGENCY CLOSURE
	GBSP1	01-Nov-05	=17	=330	softshell clam	EMERGENCY CLOSURE
	LBFP1	07-Nov-05	=23	=68	softshell clam	EMERGENCY CLOSURE
	BRRC1	07-Nov-05	=13	=18	softshell clam	EMERGENCY CLOSURE

AREA	STATION	DATE	WFC	MEAT FC	SPECIES	PROJTYPE
	GBAP1	07-Nov-05	=7.8	=37	american oyster	EMERGENCY CLOSURE
	GBSP1	07-Nov-05	=79	=220	softshell clam	EMERGENCY CLOSURE
	GBSP1	30-Nov-05	=31	=230	softshell clam	POST RAINFALL
	BRRC1	06-Dec-05	=94	=130	softshell clam	POST RAINFALL
	GBSP1	06-Dec-05	=79	=790	softshell clam	POST RAINFALL
	BRRC1	07-Dec-05	=240	=170	softshell clam	POST RAINFALL
	GBSP1	07-Dec-05	=31	=330	softshell clam	POST RAINFALL
	BRRC1	12-Dec-05	=33	=170	softshell clam	POST RAINFALL
	GBSP1	12-Dec-05	=46	=490	softshell clam	POST RAINFALL
	BRRC1	21-Dec-05	=79	=330	softshell clam	POST RAINFALL
	GBSP1	21-Dec-05	=49	=130	softshell clam	POST RAINFALL
HAMPTON HARBOR	HHHR1	18-Jan-05	=17	=170	blue mussel	POST RAINFALL
	HHHR1	14-Feb-05	<2	=330	blue mussel	POST RAINFALL
	HHHR1	22-Feb-05	=240	=490	blue mussel	POST RAINFALL
	HHHR1	28-Feb-05	=1.8	=61	blue mussel	POST RAINFALL
	HHMG1	28-Feb-05	<2	=78	softshell clam	POST RAINFALL
	HHHR1	28-Mar-05	=17	=45	blue mussel	BASELINE TISSUE
	HHWL1	28-Mar-05	=7.8	=110	softshell clam	BASELINE TISSUE
	HHHR1	30-Mar-05	=13	=220	blue mussel	EMERGENCY CLOSURE
	HHWL1	30-Mar-05	=33	=170	softshell clam	EMERGENCY CLOSURE
	HHHR1	04-Apr-05	=49	=170	blue mussel	EMERGENCY CLOSURE
	HHWL1	04-Apr-05	=13	=790	softshell clam	EMERGENCY CLOSURE
	HHHR1	06-Apr-05	<2	=45	blue mussel	EMERGENCY CLOSURE
	HHWL1	06-Apr-05	<2	=130	softshell clam	EMERGENCY CLOSURE
	HHHR1	02-May-05	=4.5	=230	blue mussel	POST RAINFALL
	HHWL1	02-May-05	=23	=78	softshell clam	POST RAINFALL
	HHHR1	10-May-05	=33	=140	blue mussel	POST RAINFALL
	HHWL1	10-May-05	=33	=330	softshell clam	POST RAINFALL
	HHHR1	18-May-05	<2	=78	blue mussel	POST RAINFALL
	HHWL1	18-May-05	<2	=170	softshell clam	POST RAINFALL
	HHHR1	26-Sep-05	=13	=330	blue mussel	RAINFALL STUDY
	HHMG1	26-Sep-05	=33	=1700	softshell clam	RAINFALL STUDY
	HHHR1	28-Sep-05	=350	=20	blue mussel	RAINFALL STUDY
	HHMG1	28-Sep-05	=7.8	=78	softshell clam	RAINFALL STUDY
	HHHR1	03-Oct-05	=33	=170	blue mussel	RAINFALL STUDY
	HHMG1	03-Oct-05	=17	=700	softshell clam	RAINFALL STUDY
	HHHR1	05-Oct-05	=4.5	=790	blue mussel	RAINFALL STUDY
	HHMG1	05-Oct-05	=7.8	=490	softshell clam	RAINFALL STUDY
	HHHR1	10-Oct-05	=350	=4900	blue mussel	RAINFALL STUDY

AREA	STATION	DATE	WFC	MEATFC	SPECIES	PROJTYPE
	HHMG1	10-Oct-05	=540	=11000	softshell clam	RAINFALL STUDY
	HHHR1	17-Oct-05	=17	=330	blue mussel	RAINFALL STUDY
	HHMG1	17-Oct-05	=130	=460	softshell clam	RAINFALL STUDY
	HHHR1	19-Oct-05	=23	=230	blue mussel	RAINFALL STUDY
	HHMG1	19-Oct-05	=11	=170	softshell clam	RAINFALL STUDY
	HHHR1	31-Oct-05	=4.5	<20	blue mussel	EMERGENCY CLOSURE
	HHMG1	31-Oct-05	=2	=170	softshell clam	EMERGENCY CLOSURE
	HHHR1	15-Nov-05	=11	=330	blue mussel	POST RAINFALL
	HHHR1	05-Dec-05	=13	=78	blue mussel	POST RAINFALL
	HHMG1	05-Dec-05	=6.8	=68	softshell clam	POST RAINFALL
	HHHR1	19-Dec-05	=33	=20	blue mussel	POST RAINFALL
	HHMG1	19-Dec-05	=7.8	=130	softshell clam	POST RAINFALL
LITTLE HARBOR	LHSG1	18-Jan-05	=7.8	=20	blue mussel	POST RAINFALL
	LHSG1	14-Feb-05	=14	=45	blue mussel	POST RAINFALL
	LHSG1	16-Feb-05	=13	=490	blue mussel	POST RAINFALL
	LHSG1	22-Feb-05	<2	=330	blue mussel	POST RAINFALL
	LHWM1	28-Mar-05	=13	=78	blue mussel	BASELINE TISSUE
	LHSG1	30-Mar-05	=70	=5400	softshell clam	EMERGENCY CLOSURE
	LHWM1	30-Mar-05	=33	=460	blue mussel	EMERGENCY CLOSURE
	LHSG1	04-Apr-05	=17	=2300	softshell clam	EMERGENCY CLOSURE
	LHWM1	04-Apr-05	=4.5	=490	blue mussel	EMERGENCY CLOSURE
	LHSG1	06-Apr-05	=2	=490	softshell clam	EMERGENCY CLOSURE
	LHWM1	06-Apr-05	=33	=3100	blue mussel	EMERGENCY CLOSURE
	LHSG1	11-Apr-05	=4.5	=4900	softshell clam	EMERGENCY CLOSURE
	LHWM1	11-Apr-05	=7.8	=78	blue mussel	EMERGENCY CLOSURE
	LHSG1	02-May-05	=2	=330	softshell clam	POST RAINFALL
	LHWM1	02-May-05	<2	<20	blue mussel	POST RAINFALL
	LHSG1	18-Oct-05	=920	=790	softshell clam	RAINFALL STUDY
	LHWM1	18-Oct-05	=49	=330	blue mussel	RAINFALL STUDY
	LHSG1	31-Oct-05	=4.5	=110	softshell clam	EMERGENCY CLOSURE
	LHWM1	31-Oct-05	=2	=20	blue mussel	EMERGENCY CLOSURE
	LHSG1	14-Nov-05	=6.8	=45	softshell clam	EMERGENCY CLOSURE
	LHWM1	14-Nov-05	=13	=20	blue mussel	EMERGENCY CLOSURE
	LHSG1	19-Dec-05	=13	=490	softshell clam	POST RAINFALL